Vol. XXXIX JUNE, 1927 No. 2

THE WILSON BULLETIN

A Magazine of Field Ornithology

Published by the
WILSON ORNITHOLOGICAL CLUB
at
SIOUX CITY, IOWA

Entered as Second-class Mail Matter, July 13, 1916, at the Postoffice at Sioux City, Iowa, under Act of March 3, 1879.

CONTENTS

Frontispiece	Photograph from U. S. National Museum	
The Military Use of the Homing Pigeon	By Frederick C. Lincoln	67-74
Notes on the Wintering Habits of the White-throated Sparrow	By H. G. Good and T. R. Adkins	75-78
Home Life of the Black Tern in Wisconsin	By Paul W. Hoffman	78-80
Some Observations in a Green Heron Colony	By Bessie Price Reed	81-85
Autobiography of Leroy Titus Weeks		87-90
Notes on the Birds of Douglas County, Kansas	By Jean Linsdale and E. Raymond Hall	91-105
Editorial		106
General Notes		107-110
Bird Banding News		111-115
Necrology		115-116
Membership Roll		117-128

THE WILSON BULLETIN

Published quarterly, in March, June, September, and December, as the official organ of the Wilson Ornithological Club, at Sioux City, Iowa.

The current issue of the Wilson Bulletin is printed by the Verstegen Printing Company, Sioux City, Iowa.

The Wilson Bulletin is sent to all members not in arrears for dues. The subscription price is $1.50 a year, invariably in advance, in the United States. Outside of the United States the subscription rate is $2.00. European Agents, Dulau and Company, Ltd., 34-36 Margaret St., Oxford Circus, London, W. 1., England.

All articles and communications for publication, books and publications for notice, and exchanges, should be addressed to the Editor.

New subscriptions, changes of address, and applications for membership should be addressed to the Secretary. Personal items, news of events in the scientific world, and other notes suitable for our "Notes Here and There" department may also be addressed to the Secretary.

Claims for lost and undelivered copies of the magazine may be addressed to the Editor.

THE WILSON ORNITHOLOGICAL CLUB

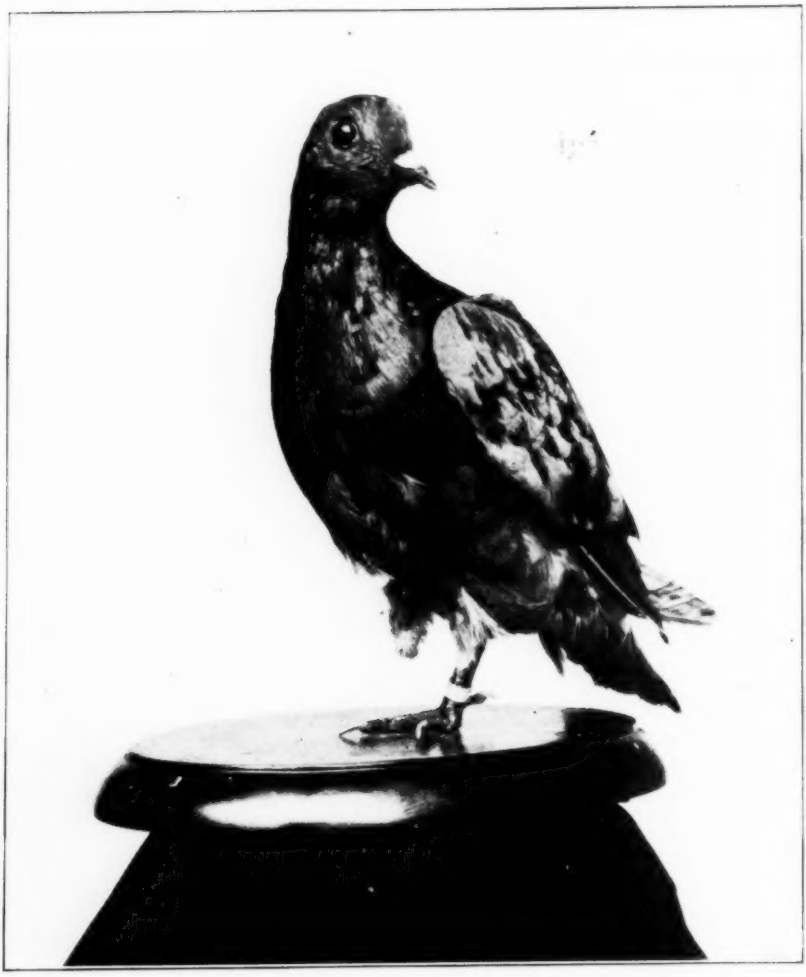
Founded December 3, 1888. Named after Alexander Wilson, the first American ornithologist.

The officers for the current year are:
President—Dr. Lynds Jones, Spear Laboratory, Oberlin, Ohio.
Vice-President—Mr. Thos. H. Whitney, Atlantic, Iowa.
Treasurer—Prof. J. W. Stack, M. A. C., East Lansing, Mich.
Secretary—Prof. Howard K. Gloyd, K. S. A. C., Manhattan, Kansas.

The membership dues are—Sustaining membership, $5.00; active membership 2.50; associate membership, $1.50 per year.

The following societies are affiliated organizations:
The Nebraska Ornithologists' Union.
The Iowa Ornithologists' Union.
The Kentucky Ornithological Society.
The Tennessee Ornithological Society.

BRADSHAW H. SWALES
MEMORIAL LIBRARY



(Photograph from U. S. National Museum)

CHER AMI

A Feathered Hero of the World War

UNIV. OF MICH.

THE WILSON BULLETIN

A QUARTERLY MAGAZINE OF ORNITHOLOGY
Published by the Wilson Ornithological Club

Vol. XXXIX. (Old Series) No. 2 June, 1927

Vol. XXXIV (New Series) Whole Number 139

THE MILITARY USE OF THE HOMING PIGEON

BY FREDERICK C. LINCOLN

[EDITOR'S NOTE. The following article will be read with greater interest if the reader understands the author's opportunities for the study of the homing pigeon. Mr. Lincoln entered the military service of the United States early in 1918, at which time he was Curator of Ornithology in the Colorado Museum of Natural History. He was soon transferred to the Signal Corps and until March, 1919, served as Pigeon Expert, having charge of various lofts, in the Western Military Department, from Washington to southern California.]

The use of birds as bearers of messages has been practiced for many hundreds of years. Pliny, in his Natural History (Book 20, Paragraph 24) states that on occasion the Roman knights took swallows with them when attending the races at Rome. At the conclusion of an event they were stained with the colors of the winning chariot and released, to fly back to their nests and thus carry the news of the victory. On the authority of one Fabius Pictor, he also records what is probably one of the first uses of a bird as a messenger of war. He states (*loc. cit.*) that when a certain Roman garrison was besieged by the Ligurians, swallows were surreptitiously taken from the city to the army advancing to raise the siege and there released to return to the beleaguered town with knotted strings attached to their feet, the number of knots indicating the number of days before relief was to be expected.

The use of pigeons for this purpose also is very ancient, particularly in the Orient from where it was brought to the attention of Europe at the time of the first Crusade, when the Saracens were found to have the birds in regular service for the conveyance of information. So efficient was this pigeon post that the Christian commanders found it expedient to employ falcons to intercept the winged messengers.

Although the flying and racing of pigeons continued publicly and as an amusement, it was not until the Franco-Prussian War of 1870 that pigeons again were of conspicuous service. During the siege of Paris, constant communication with the outside world was maintained by this means. The birds, from two private lofts, were

taken out of the city and over the heads of the besieging army by means of balloons. Microphotographs of military dispatches, private letters, and even newspaper items, were set up, printed upon thin films of collodion, and entrusted to them for their return flight. It is said that in some instances these films carried as much as 30,000 words and a regular tariff was charged for the transmission of messages by pigeon post. Upon receipt, they were enlarged and made legible by photography. Subsequently, the German, French, Belgian, and other European governments established pigeon corps as a part of their military intelligence systems.

In the South African War of 1899-1902, experiments with these birds forms an interesting part of the history of that conflict. The pigeon post at Durban marked the beginning, and scores of messages were carried from one part of the English army to another. Early in the sieges of Ladysmith, Kimberly, and Mafeking regular communication was established from the troops cooped up in the towns to the outside world. It is said that the first message of Sir George White, who conducted the defense of Ladysmith, was carried by pigeon, and this means of liaison was continued until the supply of birds in the city was exhausted.

Coincident with the entrance of the United States into the World War was the appearance before the American public of these birds as messengers of exceptional merit, although it is doubtful if the wonderful work done by the "doves of war" is fully appreciated outside of restricted military circles. Since they have won so many laurels, a brief account of the ideal bird and its ancestry will be of interest.

The homing pigeon may be likened to an amalgam. Credit for its origin belongs mainly to the Belgians, long renowned as fanciers of the first class; and to the English, who have done much toward its perfection. By careful selective breeding, carried on through several centuries, the present fusion has been produced, which, in common with other types of domesticated pigeons, traces its primitive lineage to the Bizet or Rock Pigeon (*Columba livia*) or the closely related *Columba intermedia*. The most immediate ancestry of the modern homer is traced, however, to three distinct types, the English Dragoon, the Smerle, and the Camulet. The Dragoon is of the Carrier type and is noted for its physique; the Smerle, a Belgian bird, that is an apparent relative of the "Owl" group of pigeons, has an inherent "homing instinct"; while the Camulet, a small bird related to the "Tumblers," is noteworthy because of its ability to fly hours at a time. As will be

noted, these prominent characters have been combined to a remarkable degree in the homing pigeons of today.

The Carrier Pigeon is an entirely distinct bird, larger than the homer, with large wattles and ceres, without conspicuous homing ability, and is bred almost entirely for show purposes. Custom and popular vernacular have, however, so linked the term "carrier" with the message-bearing homer, that during the World War, the former name came to have general application. Evidence exists that experiments were once made in an effort to use Carriers, Dragoons, and Horsemen for the transmission of messages, but with only moderate success. At one time the names "Flying Antwerp" and "Antwerp Carrier" were in use, at once suggestive of the attention given to these birds by the Belgians, but the term "Antwerp" has become gradually attached to the homing pigeons that are bred only for show purposes and are never flown.

The general coloration and markings of the racing homer are similar to those of the pigeon of the farmyard or the city streets, as they occur in a variety of color combinations known as red, black, blue-checkers, blue-bars, magpies, and others. Colors generally have no relation to the quality of the birds, but the checkers (particularly the blacks and blues) and the blue-bars are generally preferred for military use because of the reduced visibility when in flight. White homers are sometimes bred but have not proved popular with modern armies.

The typical bird of high quality is a trim, racy bird, in contrast with the more stockily-built squab-breeder. The forehead is well developed, frequently prominent, probably indicative of the superior intelligence that characterizes them, while the eye is exceptionally bright, clear, and expressive. The primaries are obviously of great importance and when the wing is fully spread it should make a straight line and show no interstices between the feathers.

The greatest difficulty experienced by the personnel of the pigeon service during the World War was overcoming a tendency on the part of other branches to look upon pigeons as a joke, and it was necessary to develop a feeling of confidence that the birds would deliver their messages even under the most adverse conditions. Anyone who has had first-hand knowledge of their achievements will, however, entertain a strong conviction regarding their efficiency. A little thought on this subject will suffice to explain the reasons which are well illustrated by the report of a French signal officer and which deals with their performance at the Battle of Verdun. In that major engagement

pigeons established a record of efficiency between 97 and 98 per cent, and frequently were the only means of communication between the "zone of advance" and the rear echelon. The intensity of shell-fire in modern warfare often renders liaison by radio or telephone impossible, while runners are always delayed and visual signals are likely to be obstructed by smoke, dust, or fog. Pigeons, however, are undeterred by such conditions and can and do bring accurate information concerning the situation of the troops in action, within a relatively short space of time.

In the Meuse-Argonne offensive 442 American pigeons were used which delivered a total of 403 messages over distances varying from 20 to 50 kilometers without the loss of a single important dispatch. These birds had received only five days training on account of the hurried notice of impending attack, and in view of the frequent changing of loft positions the performances of certain individuals were nothing short of marvelous.

Unquestionably the most famous of the birds was "Cher Ami," which is credited with the saving of Major Whittlesby's "Lost Battalion." Released with its message on October 21, 1918, at 2:35 P. M., during an intense machine gun and artillery action, it delivered its message 40 kilometers distant in 25 minutes. Examination showed that one leg had been shattered and that the bird's breast had been pierced by a machine gun bullet. The message tube, still intact, was hanging by the ligaments of the injured leg. Although not immediately fatal "Cher Ami" died June 13, 1919, from the effects of the wound, and is now mounted and preserved in the United States National Museum.

Another interesting case is that of a bird known as the "V. C. Pigeon," which is mounted at the Royal United Service Institution, Whitehall, London. This bird was released with a message on October 4, 1917, at 1:50 P. M., and was struck by a bullet that broke one of its legs, drove the message tube into its body and then passed out of the back. In spite of these fatal wounds, and a drenching rain, the bird homed to its loft the following morning. The message probably had lost its usefulness but the record is of exceptional interest in showing the strength of the homing instinct.

Practically all branches of the military service have found need for the pigeons, although their greatest use is with infantry in front line trenches or attack, and with air-craft. The birds that "go over the top" are placed in baskets made to hold 2, 4, or 6 birds usually strapped to the back of the infantryman or cavalryman charged with

their care and who remains close to the officer responsible for the preparation of messages. To prevent injury to the birds through jolting or jostling of the baskets, the birds are fastened in light corslets made of webbing which immobilize their legs and wings, but allow free movement of the head and neck. By means of elastic bands attached to the four corners of the baskets and to the corslets, they are then suspended horizontally in positions that while probably not entirely comfortable, are at least safe. Before releasing pigeons that have been so confined, it is necessary to allow them opportunity to stretch and flap their wings, which may be done while the bird is held in the hand, although a better method is to permit them a short liberty in a basket, box, or such other suitable receptacle as may be at hand. Pigeons accompanying aircraft are not placed in corslets but are put into baskets divided into compartments of one bird each.

The messages are written on thin rice paper and placed in carriers or capsules made of thin aluminum, which are attached to one leg of the bird by means of copper bands. Message carriers strapped across their breasts have been tried but are not so satisfactory, as they interfere to a certain extent with the free movement of the wings. Small capsules inserted in the crop, can be used successfully, but no useful purpose seems to be gained aside from a possible greater assurance against loss, although a message properly inserted in a leg carrier, crimps itself in such a way as to seal the tube and eliminate danger of loss in transit.

In the mind of the ornithologist, the homing instinct of these birds will be immediately associated with the migratory instinct that each spring causes untold thousands of native birds to traverse vast distances of land and see in a journey north to breeding grounds, and back again in the fall. Basically, the two are the same although our knowledge is most incomplete of the fundamental reasons responsible for this faculty.

For the sake of a parallelism, reference may be made to the data that have rapidly accumulated since the advent of the banding method, and which show innumerable cases of wild birds that have returned not only to the precise summer and winter homes, but also to given points on the route followed in a previous season. Fanciers are not lacking who claim that homing instinct is all "bosh" and that it is the training given by the owners that is responsible for the ability of the pigeons to return to their lofts. In the opinion of the writer such

statements show more or less disregard for the facts and are illustrative only of the conceit of the fancier. There can be no doubt that proper training adds wonderfully to their efficiency, but training starts with a natural fact firmly established, viz., the inherent fondness of the bird for its home and its intense eagerness to get back to it when forcibly removed to a distance. Failure to recognize the sense of direction leaves obstacles that are seemingly unsurmountable when attempting to explain the return of any bird to its nest through dense fog or from long distances at sea. Dr. John B. Watson has* graphically shown that individuals of the Noddy and Sooty Terns, which reach the northern limit of their breeding ranges on Dry Tortugas Islands, Florida, could be taken several hundred miles farther north and when released, would return to the colony over areas that they certainly had never before seen.

Homing instinct, or sense of orientation, is a faculty possessed not only by homing pigeons and migratory birds, but also by many insects, fishes, and mammals. The facility with which experienced hunters and woodsmen locate tiny camps or other points in wooded or mountainous country seems frequently due to an application of this talent.

In the case of the homing pigeon efforts have been made to connect homing instinct with other senses, but the results obtained are inconclusive. Disturbance of the columella, or the semicircular canals of the inner ear, will destroy the homing instinct, but as the particular function of the canals is that of balancing or equilibrating the individual, the results of such experiments can not be considered as establishing the seat of this instinct. Furthermore, such operations, even when performed by the most skilled anatomist, are of the greatest delicacy, and the subsequent failure of the bird to perform properly, might be easily due to other causes resulting from the operation. Similarly, closing the auditory passage with wax would be sure greatly to annoy the bird so treated, causing it to make frequent stops, and finally by developing intense nervous irritation cause exhaustion with attendant disturbances.

In the light of present knowledge the homing instinct of the pigeon should be considered as a specialized form of migration developed and exploited by man through training and selective breeding.

Other factors contribute largely to the effectiveness of the instinct and these are the qualities that respond to systematic training. The

*Watson, John B. "The Behavior of Noddy and Sooty Terns." Pub. No. 103, Carnegie Inst. Wash., Paper VII, pp. 187-225, pls. i-xi, March, 1909.

most important is an acute vision coupled with a wonderful memory. The working of these faculties is readily demonstrable and may be illustrated by citing the case of a bird trained by the writer at March Field, California, and repeatedly flown from the summit of Mt. Rubideau, near Riverside, about nine miles air line from the loft. Upon first toss from this point, the customary circling (known as "finding direction") delayed the bird so that between 20 and 25 minutes were required for the trip. Subsequently flights rapidly cut down the time until upon a few occasions (under favorable wind conditions) the flight was made in nine minutes. This course became so well known to the bird that it was repeatedly released from the outstretched hand, pointed toward March Field, and was observed to fly from sight, apparently without varying a degree from a straight line. The maximum speed developed by this bird (60 miles per hour) is exceptional for—although cases are known of even greater rates—the average flying speed of the Homing Pigeon is more nearly 35 miles per hour.

This retentive memory coupled with other qualities constitutes the foundation upon which is built by good training the efficiency of the bird as a messenger. Effective training of homing pigeons depends largely upon the skill and patience of the pigeoneer, for, although fundamental rules may be prepared for his guidance, ultimate success usually results from his own ability. In fact, the selection of suitable personnel is easily the most important feature in the military use of this bird.

Lofts are almost invariably stocked with young birds. Old birds that already have received training can be trained to home to a new loft, but if of any value at all they will be sure to return to their original loft at the first opportunity. After the birds have become thoroughly accustomed to their new home (usually 4 to 6 days), they are allowed to go out on their own initiative. First liberation is generally permitted in late afternoon before the birds have had their final feeding. The normal young bird will perch on the landing board or loft roof, making short flights therefrom, gradually extending these ventures. They are then called into the loft by a rattle in the hands of the keeper and fed. Civilian fanciers frequently whistle, but a can containing pebbles or grain has been found preferable at military lofts. This practice is continued twice a day until the pigeons become thoroughly familiar with the external appearance of the loft and its surroundings. Six or eight weeks may be spent in these exercise flights before additional training is given. They are then taken in baskets for short distances (under one mile) and released singly and

in groups. Great care must be used in this first training to select days when weather conditions are favorable. They are always released hungry and are fed immediately upon trapping in at the loft.

The distance is gradually increased up to five miles, certain birds always flying from the same direction which—in the case of military birds—is the sector to which they will be assigned for the transmission of messages. After the five-mile flight has been made on a few occasions, the distance can be rapidly increased to 10, 15, 20, 25, 50, and 100 miles. Pigeons used in warfare are rarely called upon to fly distances in excess of 50 miles and the great majority of the messages brought in will be from distances under 20 miles. Well-trained birds are entirely reliable for such distances. They are, however, capable of much longer flights, and among racing pigeon clubs the 500-mile race is always a special feature. On the Pacific coast a regular course is between San Francisco, California, and Seattle, Washington, the winning bird making the flight in a single day. A prize hen owned by the U. S. Department of Agriculture made the 580-mile flight from Chicago, Illinois, to her loft at Beltsville, Maryland, in 15 hours and 40 minutes. The fastest time made by a railroad train between Washington, D. C., and Chicago is 19 hours.

Although the homing pigeon is a diurnal bird, some interesting work in night flying has been done. The French have been the pioneers in these experiments and some wonderful results have been recorded. Birds trained for such work have been tossed on dark nights as late at 10:00 P. M. at distances varying from 18 to 40 miles and have returned in good time. American pigeons in the Canal Zone also have shown exceptional results in flying at night, but from a practical point of view, no reliability can be placed on them when flown after dark. Special training is, of course, necessary, and the lofts must be equipped with special lighting arrangements, while it is questionable, because of the other means of communication that are always available when darkness descends, whether the attempt is really worth the effort.

The reputation of the homer is, however, well established and its usefulness as a carrier of war dispatches insures it a prominent place among the communication methods that will be employed by the armies of the future.

U. S. Biological Survey,
Washington, D. C.

NOTES ON THE WINTERING HABITS OF THE WHITE-THROATED SPARROW (*Zonotrichia albicollis*)

BY H. G. GOOD AND T. R. ADKINS

One of the most interesting, common, and friendly birds in the southland in winter is the White-throated Sparrow. Although not very well known to the people, it is friendly and gives a very good opportunity for the observation of its habits to be made during the winter months where it is a winter resident. This paper is the result of two winters' observations and notes made during 1923-24. During the winter of 1925-26 the junior author made copious notes from his observations, from the time of their arrival in the fall of the year till their departure in the following spring.

Auburn is well situated for the study of this bird, as it is located at the end of the Piedmont Foothills region with grassy fields and mixed forests. A great number of small creeks permeate this region, resulting in a considerable undergrowth of bushes and vines in which the White-throated Sparrow spends most of its existence during the winter months. It is also in this type of locality that most of the birds feed upon various types of food.

Although this sparrow is a regular winter resident in this section of the country, it varies to a great extent year after year. During the winter of 1923-24, this bird, although present, was quite rare, and not commonly found in the city limits. Its time was primarily restricted to the protected wooded areas. During the winter of 1924-25, the best observations were made, but the notes were not as fully completed as during the last year. During the 1924-25 season the birds were everywhere abundant, especially in the town. In the early morning and late afternoons these birds were commonly found feeding in the yards upon seeds and other types of food that they were able to pick up. They, at all times, appeared to be very friendly and one could observe them very closely before the birds would take flight. It was during this period that forty birds were captured and banded.

During the winter of 1925-26, which was a very severe winter here in the south, there were but relatively few birds present. An intensive study was made to verify the observations of the previous years, with especial reference to the song, associates, general habits, and food. The greater amount of these observations were made by the junior author.

Although, as a general rule, birds do not sing during the winter season, the white-throat is the best songster in the winter, its sweet,

yet plaintive song coming from the low bushes in early morning or afternoon. There are two call notes used by this sparrow, the first being low, tranquil, yet musical and suggests pity to the ear of the listener. It is very easily distinguished from all of the other birds and also from the second call note which ends in a sharp metallic chirp. This latter seems to donate warning to the other birds and also scolding. It is not as common as the former and at times not easily made out. The true song of this sparrow is the same as that given during the breeding and nesting season in the northern states. It is very sweet and plaintive. Although it is not a loud song, it is very vibrant and carries a remarkably long distance. There are also two types of songs present. The first one starts on a low pitch, the succeeding notes being very high and tremulous. The flute-like quality of this second pitch gradually becomes fainter and fainter, making one believe that the bird is traveling away at a very rapid speed. The other song usually starts at a higher pitch, the succeeding notes being lower. As its song is quite easily imitated, one can very often whistle to a bird that is singing, and in that way cause it to answer repeatedly, and at times, the bird can be attracted to the one whistling. This is especially true if one remains concealed as much as possible and remains motionless. This has often been done.

The time of the day in which the birds sing most frequently is in the morning up to nine o'clock, especially in the spring. During the shorter days of winter, the song is not so common, but may be heard at almost any time of the day. It also sings to a considerable extent in the latter part of the day, resting during the mid-day hours.

Study of the White-throated Sparrow in thickets will acquaint the observer with the bird's associates. The Towhee or Chewink (*Pipilo erythropthalmus*) will always be found accompanying this species. Other birds found in similar places were: the Song Sparrow (*Melospiza melodia*), Cardinal (*Cardinalis cardinalis*), Carolina Wren (*Thryothorus ludovicianus*), Brown Thrasher (*Toxostoma rufum*), Slate-colored Junco (*Junco hyemalis*), American Redstart (*Setophaga ruticilla*), Ruby-crowned Kinglet (*Regulus calendula*), Louisiana Water-Thrush (*Seiurus motacilla*), Myrtle Warbler (*Dendroica coronata*), Hooded Warbler (*Wilsonia citrina*), Black and White Warbler (*Mniotilta varia*), Summer Tanager (*Piranga rubra*), Wood Thrush (*Hylocichla mustelina*), Carolina Chickadee (*Penthestes carolinensis*), Tufted Titmouse (*Baeolophus bicolor*), Brown Creeper (*Certhia familiaris americana*). The Towhee is the White-throated Sparrow's closest friend. It is found roosting along with the White-throated Sparow in

the underbrush of the thickets. The general outline of the Towhee is very similar to that of the White-throated Sparrow; a profile view of the two birds as seen at twilight, in the clearing of the thicket, shows this very plainly. The two birds as seen under these conditions appear to be the same color throughout and body carriage and size serve as the only method of discrimination.

Just before sunset on the afternoon of October 11, the Towhee's ringing call note was heard some distance up the stream from where I was watching the different migratory forms as they were engaged in catching insects along the banks of the stream, indicating that the day was almost spent. I began immediately to strain my ears and eyes for the purpose of discovering the Towhee's companions. Only a few minutes passed before the Towhee made its appearance among the grape vines which offered a plain view in the clearing of the thicket. A moment later the Towhee took flight and almost immediately there were eight or ten White-throated Sparrows occupying the entanglement. The Towhee's call note was again heard farther down the stream and almost instantly the visitors followed their host to the den er section of the swamp down the stream, taking up their excitive note upon reaching their destination.

During the winter season of 1924-25, trips were made at night in order to catch birds for banding purposes. In a number of heaps of cut pine branches, a great number of birds were found spending the night for protection. In these heaps associated with the White-throated Sparrows were the following birds closely associated: Chipping Sparrows (*Spizella passerina*), Vesper Sparrows (*Pooecetes gramineus*), Slate-colored Juncos (*Junco hyemalis*), and the American Pipit (*Anthus rubescens*) in less numbers. This was the only time in which the Pipits and white-throats were found together.

Five White-throated Sparrows were taken during the winter as follows: November 30, December 14, December 31, January 30, February 17. Analysis of these stomachs showed that the largest per cent of the bird's food consisted of insects of different species; the beetles seeming to be dominant and the remainder of the contents consisted of weed seeds mostly, with some small pieces of plant buds.

Two Slate-colored Juncos were taken January 30 and analysis of these stomachs showed that nearly the total food of these birds consisted of weed seeds. One Brown Thrasher was taken January 30 and an analysis of the stomach contents showed that the food consisted of about one-third weed seeds to two-thirds insects.

There were no particles of fruit found in any of the stomachs. Cotton was planted in an adjacent field which held its foliage until late in the season offering an ideal place for hibernation of boll weevils in the thicket, nevertheless none of these insects were found in any of the stomachs taken. It was found that the White-throated Sparrow consumed most of its food before 10:00 A. M. each day as the per cent of the daily ration indicated when taken at different times of the day.

Migration. This bird is a winter resident in this part of the country and very careful observations are required to determine the date of its first arrival. The birds that come first are usually few in number and the recognition of its song is almost more important than sight, due to the secretive habits of the birds when they first come south. Later, as the numbers increase, they seem to lose their timidity and are easily observable. A considerable amount of time is required in the field in order to detect the first arrival.

During the season of 1924-25, the first birds arrived on October 14, gradually increasing in numbers until by November 15, there were a great number present. These stayed through the mild winter until the middle part of April. The last record of a White-throated Sparrow was on April 25, 1925.

During the season of 1925-26, the first bird observed was on October 5, 1925, with the numbers gradually increasing. There were never many birds present due to the severe winter and most of them kept in the protected woods, venturing out only when the temperature climbed and the prospects were for a bright day. The winter quota of birds was reached about November, and the birds started to leave toward the end of April, the last one being heard on May 7. In general, the time of arrival and departure is very close year after year, the temperature condition governing the dates and also the number of birds in a locality.

Alabama Polytechnic Institute,
Auburn, Alabama.

HOME LIFE OF THE BLACK TERN IN WISCONSIN

BY PAUL W. HOFFMAN

Another season of studying the Black Tern (*Clidonias nigra surinamensis*) came to a close on our last trip to the nearest colony of these birds at Big Muskego Lake, Waukesha County, Wisconsin, on July 24, 1926. Early in June Mr. J. Jeske, Assistant Artist of the Milwaukee Public Museum, Mr. R. Doughty, bird lover and photogra-

pher, my wife and myself, made preparations for week-end trips to obtain better pictures and more interesting facts concerning the home life of the Black Tern, and to do some banding. Our first trip was taken on June 6, a day of continuous squalls; but masses of black clouds, accompanied by high winds, and rain with thunder and lightning, did not discourage our happy crew as we poled our boats through the marsh taking an occasional soaking. We located the nest of a Black Tern containing three eggs, and anchored the boats about ten feet distant. A number of birds were hovering and circling about overhead screaming their loudest at this intrusion. Neither parent bird was bold enough to descend to the nest. Just then came a shower, and as the first drops of rain pattered down, there was the faithful parent bird on the nest, squatting down firmly with wings slightly open to effectually shed the water. Moving about in our boats to sponge out the water, and covering ourselves with newspapers failed to frighten the little mother facing the rain as it beat down upon her. The rain had barely ceased when up flew this timid little guardian.

Contrary to this on the very next trip I found a very bold defender of a nest containing two eggs and one newly hatched young. Rounding a small bog of wild rice, I came upon this nest which was ideally located for a picture. My companions and I were considerably surprised at the boldness of this mother bird. We had just anchored the boat and focused on the nest eight feet distant when down came the bird screaming and much agitated. Her object it seemed was to drive the youngster away from the nest into hiding. In this she succeeded, although she kept up an almost rythmic performance of hovering, dropping to the nest, tucking in her wings, then springing into the air to circle overhead and repeat the performance. To really test her boldness we moved the boat nearer and anchored again so that the lens of the Graflex was not more than four feet from the nest. This did not in any way deter the tern from coming down to the nest every few seconds, in fact she calmed down to the extent of settling down on the eggs for short intervals, her screaming also diminishing to a throaty scolding. It was then that the young wanderer came back to the nest to snuggle down under his mother.

In my experience the first instinct of the parent bird when approached, is to shoo the little ones from the nest into hiding. One can almost definitely say, even before locating the nest, whether it contains all eggs or one or more young birds, by the cries of the hovering birds. It is then in seeking the young birds, that one must

hurry through and around the bogs in order to arrive before the complete disappearance of the youngsters which themselves are so distracted they will climb over the edge of the nest and take any direction from it, paddling along hurriedly over lily pads, and dodging through the rushes. The parent birds swoop down then and give the escaping youngsters quite a sharp peck at the back of the head, which hurries them into hiding. Immediately upon entering the edge of a bog, or the merest semblance of one, the little one will stop suddenly and rest immovable. If one now anchors his boat remaining in sight of the nest, but a reasonable distance away, a young bird (a week old or less) will invariably return to the nest in a short time. All young Black Terns until they are able to fly are easily overtaken with a row boat. A dip net, oval in shape, eight inches long, six inches wide, and four inches deep, attached to a pole thirty inches long, is a very convenient accessory for the purpose of lifting them out of the water for banding. Young terns on the water cannot swim faster than a person can row, and as they do not dive their capture becomes an easy task when it occurs in open water.

On June 20 we found quite a number of young Pied-billed Grebes swimming about, but when we tried to approach them they immediately dived and swam under water. We eventually succeeded in capturing two of them, and took some pictures. Releasing them we decided to watch their antics and accordingly set the prow of the boat into a convenient bog. We had hardly settled when an excited tern, who saw us moving about spied the young grebe and swooped down to drive it away from us. Is it possible that this tern mistook the grebe for a young tern?

During the hottest part of the day Black Terns are rather inactive, at which time they frequently come down to their nests, to sit or stand over the eggs, shading them from the sun. A few birds, perhaps the males, are seen flying about in search of food.

On June 27 we observed a nest with two newly hatched young and one pipped egg. Returning to the nest one hour and forty minutes later we saw that the third egg had hatched, the nest now containing three downy young, brown in color with black spots on their backs, white faces with beady eyes, black bills and webbed feet. All egg shells had been promptly removed and I can truly say, of the hundreds of Black Tern nests observed, empty or containing young, I have never seen egg shells, or other foreign matter in or about them.

Milwaukee, Wisconsin.

SOME OBSERVATIONS IN A GREEN HERON COLONY

(*Butorides virescens*)

BY BESSIE PRICE REED

This report has to do with some observations made in a Green Heron colony during the seasons of 1921 and 1922. The colony was located in a willow marsh near the north shore of the eastern section of the dam at Lakeview, Kansas. The growth of willows was very dense; individual bushes occasionally reached a height of twenty-five feet and grew in water varying from two to four feet in depth. The marsh was about four hundred feet long by one hundred feet wide at the widest point and roughly oval in outline, approaching within thirty feet of the main shore line at the nearest point.

Early in the spring of 1921 a number of adult birds were observed in this vicinity. There was no subsequent opportunity for observation until July 6 when, by wading in among the willows, it was found that there were more than a dozen nests at heights above the water varying from three to twenty feet. Three of these were empty though evidently recently occupied.

On casual observation the nests appeared to be quite loosely constructed. It was often possible to see the eggs from below. Usually they were built in an approximately upright fork. In no case did the fork have more than two branches. The nests were invariably composed of bare willow twigs about eight to ten inches long, so closely interlaced that it required considerable effort to pull apart an old deserted nest. In general they were in the form of an inverted cone, the top being almost flat. So solidly were they constructed that remains of old nests could be found the following season. There was never any accumulation of debris, food remains, or excreta in the nests so they were very clean even after several weeks of occupancy.

Several nests, when first found, contained eggs varying in number from one to five. But in several nests were young birds, some evidently only a few hours old while others were able to clamber awkwardly onto the adjoining branches and sometimes traveled quite rapidly from bush to bush so that pursuit through the tangled thicket was very exciting. Not infrequently the young birds were able to escape entirely the combined efforts of two people to capture and band them. When placed in the water those only three or four days old were able to swim quite well. Very often they were observed.

when evidently only a few days old, perched on branches several feet from the nests. Several broods were found that were not accessible for capture and banding. When captured the very young birds usually made but little struggle for freedom. The older ones, however, scrambled away at the first opportunity and took to the water, swimming rapidly until they reached a willow where they would scramble awkwardly to the very top. With no effort at all they would move from one willow to another, climbing ever upwards until out of reach. All, except the newly hatched ones, stretched their necks at full length either moving their heads in different directions or remaining motionless. A quick motion toward them brought a darting, snapping re-

Willow Marsh, Site of the Green Heron Colony

sponse. The newly hatched ones would feebly lift their heads, then sprawl about helpless in the nests.

One young heron when handled began to stretch its neck full length and then withdraw it. It did this repeatedly until a dragonfly larva was regurgitated. On one occasion when trying to take a picture of some nestlings that were known to be less than two weeks old, one finger was thrust between the legs of one of the birds in an attempt to lift it off the perch. The bird resisted the upward pressure by holding tightly to a branch. Suddenly it regurgitated a pellet about an inch long by three-quarters of an inch thick. On examination this pellet was found to consist of the remains of grasshoppers and other insects.

The colony was subsequently visited on July 12, 19, and 30. One nest containing four eggs on July 12 was observed on the 19th to con-

tain three nestlings. The other egg was not found. These three young birds were still in the nest on July 30, when they were caught and banded. At this time they were able to fly for a short distance but all were safely returned to branches near the nest. No other broods were in evidence anywhere in the marsh at this time.

A careful survey of the marsh during the season of 1922 gave a total of thirteen nests. On June 8 nest No. 1 had four very young birds. At No. 2 there were three young climbing about. Nests Nos. 3 and 4 while new were empty; evidently the broods had already gone. Nest No. 5 had two eggs. Nest No. 6 revealed three newly hatched birds and one egg. In No. 7 the young were three or four days old while No. 8 had one egg and three nestlings scarcely dry. No. 9 had only eggs.

On June 17 the birds from nests Nos. 1, 2, 5, and 7 were gone. Nests Nos. 6 and 8 showed the one egg hatched. In the latter nest the other three birds, already hatched on June 8, were high in the tree. Nest No. 9 had five young. On this same date two new nests were discovered. No. 10 contained two eggs; No. 11 was twenty feet above the water and inaccessible. Below this nest on July 8 one egg was found. On this date two more new nests were discovered. No. 12 had three eggs while No. 13, likewise twenty feet above the water, had at least that many. On July 15 this nest contained one nestling.

Accurate count showed that twenty-seven birds were reared that season and all evidence indicated that others of which no count was tabulated had left nests earlier in the season.

Practically every brood showed distinct differences in age among the nestlings. This was due, no doubt, to the habit of the adults beginning incubation before the complete set of eggs had been deposited. Those nests containing one egg along with nestlings showed the last one hatched much smaller than the rest. This difference was also manifested by the reactions of the young while still in the nest. The degree of response varying with the age of the bird.

The plumage of the newly hatched birds was soft, downy and of a dull grayish green color. In a few days darker hued, glossy feathers began to appear on the wings and neck. By the time the young were ready to leave the nest the scapular plumes had become still darker and all the soft down had been replaced by a coat, not quite so luxuriant as that of the adult bird but very similar in every other respect

Green Heron Nest and Eggs

Nestlings one day old

Nestlings three to four days old

Young about ten days old

Nestling too young to perch well

Banded young, ten days old

so far as superficial appearance was concerned, except for the absence of the crest.

The feet, legs, and bill were greenish yellow from the beginning and did not change greatly during the period of observation.

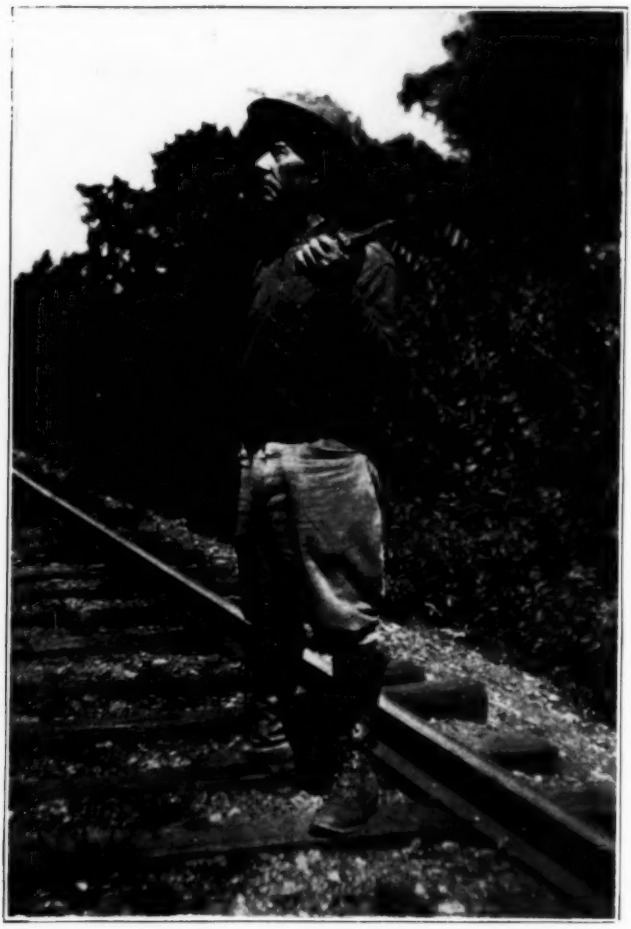
During these visits to the marsh not many adult birds were seen. At no time were there ever more than three or four. These would circle about the thicket in a rather excited manner or perch in some nearby willow and watch proceedings, uttering now and then their harsh squawks. Frequently one of them was seen slipping back to its nest after the intruders had departed. Occasionally upon approaching the marsh one or two adults would leave the thicket making more or less fuss as they flew about.

Within or near the heron colony there were ten nests of the Red-winged Blackbird, one Kingbird, and one Mourning Dove nest. The first nest of the Kingbird was destroyed but the second served as home for three young. The so-called water moccasins seemed to be quite common. Not infrequently one would be seen coiled up in a tree near a nest. On one occasion a snake was seen crawling out of the nest of a Red-winged Blackbird.

In the early part of the season of 1923, about the middle of June, the marsh was again inspected. No adult birds were in evidence and no nests were found. Absence from the region prevented further study but reliable reports furnished the information that no herons used the willow thicket that season. An investigation in the fall confirmed this report since no old nests were found. The thicket was less dense, a number of willows having died, but still there remained enough to afford sufficient cover. The marsh was in the limits of the Lakeview Club grounds so no shooting was allowed except in open season in the fall and then the privileges were limited to members only. In fact the grounds were at all times carefully patroled; even these investigations could not be undertaken without a permit. It is not possible to draw conclusions as to the reasons for this desertion of a rookery safely occupied during the last two seasons.

In the season of 1921 eleven nestlings were banded with U. S. Biological Survey bands; in 1922 twelve were so banded. There were never any returns from any of these.

Dallas, Texas.



(Photograph by Chas. G. Spiker)

LEROY TITUS WEEKS

AUTOBIOGRAPHY OF LEROY TITUS WEEKS

[EDITOR'S NOTE. Dr. Weeks was one of the most unique men we have ever known. Among our mid-western bird men he was an outstanding personality. He was an individualist in his personal conduct. In production his field was poetry; but in human associations he was an ornithologist —a nature lover. His artistic nature was expressed in poetry; his scientific nature was rigorously developed in the care and accuracy of his field studies. About a year ago we asked Dr. Weeks to write a short account of his life. The following sketch was prepared under date of June 1, 1926. It is a frank and open story, without any attempt at feigned humility. It is written with what we might call the simplicity of greatness.]

I was born at Mount Vernon, Iowa, February 1, 1854, son of Lucas A. Weeks and Elizabeth Jane Rigby. Grandfather, Barak Weeks, was captain of militia in the War of 1812-14, and was ordered to the front with his company. He was an expert swordsman. As far back as we have any record no Weeks family has ever remained in one locality any longer than to rear a family that needed more room. Great-grandfather John Weeks was born in western New York; Grandfather Weeks, in western Pennsylvania; Father, in Ohio; and I, in Iowa. When I was eighteen, true to the Weeks habit Father moved with his wife and seven children to northwest Kansas.

I returned to Iowa that fall, and remained here, entering Cornell College in the second year of the Preparatory Department—one month after my twenty-first birthday. I had to earn every penny that went into my education and was compelled to remain out of school at times, once for two years, to replenish my pocket-book. Hence I was twenty-nine when I graduated in 1883. I was the only member of that class to earn his own way, and the only one to wear the Phi Beta Kappa key. To earn money I taught in the winter times, or worked on farms in the summer. It went against my stomach to canvass for subscription books or nursery stock, though one of my classmates earned three hundred dollars one summer by canvassing, while I worked for a dollar a day. But I clothed myself economically, and "batched." I started in one fall with sixty-three dollars and thirty-five cents, and went through the year. The College burned only wood in those days, and I was always sawing wood at fifty cents a cord. Some Saturdays I sawed two cords. However, the wood for the classrooms was sawed into only two pieces.

When I finished my Sophomore year I made up my mind that I needed experience in social matters, and remained out of school two whole years. When I returned I had good clothes, and money enough for boarding. The classmates who remembered the smell of cookery on my garments had graduated. Then I plunged. The first year I made it a law not to go to any public function without a girl, and

never to take the same one twice. I kept that up until I had taken out fourteen different girls. I wanted a baptism of social life.

When we went to northwest Kansas in 1872 we found buffalos, prairie dogs, rattlesnakes burrowing owls, and antelopes; and once in a while an animal which I called a pine marten, whose fur was rich lemon-yellow, except for a black-tipped tail. It had the boldness of the weasel. One of them would get into a prairie dog town and put the whole colony on the run. I ran one into a dog hole, and it came right up between my feet, and looked at me with the bold curiosity of the weasel. I got a trap, ran him into a hole, held to the end of the chain, and had him in less than ten seconds. That summer, 1872, a buffalo came right down the main street in Osborne, and a man shot him from the hotel veranda. I enjoyed a steak from the T-bone region. My two brothers and I went buffalo hunting on the Fourth of July that year, and my oldest brother killed a big bull.

After my graduation I spent two years in Kansas as School Superintendent. In October, no, September of 1885, I was elected to the Chair of Latin in Wilbur College, Lewiston, Idaho, and went out there. I was so dissatisfied with the institution, which I called a "play-school in a fence corner," that I jumped at a chance to go out to Grangeville, seventy-five miles by stage, and do missionary work. After one year I was elected Principal of the Columbia River Academy, at Grangeville, a position I held for two years; after which I returned to Osborne, Kansas, as Superintendent of Schools. From here I went to Centralia, about sixty miles west of Atchison. The next year I went to Texarkana, Arkansas, to be head of the Inter-state College. While there I was appointed to be Acting President of Little Rock University, a position I resigned to enter the Methodist ministry. In 1894 I was sent to Beebe, thirty-three miles north of Little Rock—and the following year to Texarkana, as pastor of the First M. E. Church. In June, 1895,* I entered the Graduate College of the University of Chicago, for the study of English, and remained there until the spring of 1897. At this time I became Professor of English at Southwestern College, Winfield, Kansas, where I remained until 1905, then accepting the same position in McKendree College, Lebanon, Illinois. At the end of the first year I was ". . . retired," because, as stated by a written statement signed by all five members of the "Committee on Faculty and Salaries," I was guilty of attending the theatres in St. Louis, which indicated that I "was not in harmony with the doctrine and rules of the M. E. Church, which precluded his holding a position in said

*There is apparently an error in dates here —Ed.

College." I then withdrew from both the ministry and membership in the M. E. Church, in which I was a "minister in good standing." I set myself at once to reading up on the various Protestant communions, and, after a year, I entered the Episcopal Church, being confirmed with my first wife by Bishop Osborne, in East St. Louis.

In February, 1911, I began training in Trinity Cathedral, Davenport, for Holy Orders, and was later sent to Newton, Iowa, to take charge of an Episcopal Mission, of sixteen communicants. After two years here I was married to Miss Ada Pauline Kuhn, at Evanston, Illinois. I hoped to get a parish in the Diocese of Chicago; but, after vain efforts, I accepted the Trinity parish at Emmettsburg, Iowa, in October, 1915, and remained here for the next ten years, until going to Tabor College.

While the conditions were not strongly frontier when I was born, yet I was brought up under pioneer conditions, because my parents were pioneers, who were born of pioneers, who were in turn born of pioneers, until it was bred in the bone. It thus happened that the pioneer characteristics, the habit of relying on one's self for everything, was bred into me. My Grandfather Weeks had his own tools for blacksmithing, his own tools for building, i. e., the shaving horse, broad axe, adz, etc. My own Father could do more things in wood with his axe alone than men now do with a chest of tools—I mean men who are not professional wood-workers. Father had his own shoemaker's bench, and his own sadler clamps for mending harness. Grandmother Weeks had her own spinning-wheel and loom. I am putting down these facts in order to say that I grew up unconsciously with the habit of making whatever I wanted, without asking help of anybody. If I wanted a yoke for breaking steers I made it without so much as a thought of saying anything about it to anybody. If I wanted a sled I made it, if I wanted a bow and arrow I made them. I even tried to make a pair of skates.

My Grandmother laughed till tears came to her eyes when she found me putting a side pocket in my wamus, when I was eight years old.

Mother died on April 14, 1861, the day the flag was hauled down on Fort Sumter; and for the next two years and a half I lived with Grandmother. Father was in business in Mount Vernon, Iowa, and was broken up during the financial crash of 1857. He trusted everybody, and was a poor collector. We then moved down onto the farm with Grandfather and Grandmother Weeks. Grandmother took a fancy to me right off, and began teaching me to read; so that when I entered

the country school at six I began with the class in McGuffey's old Third Reader. While I was reading in this reader McGuffey brought out his "new" series, putting many lessons of the old Third into the new Fourth, so that when I was sent on I went into the new Fifth, where I was reading in a class of pupils of eighteen while I was but eight.

Grandmother Weeks was one of the tenderest, gentlest souls I ever knew; while Grandfather was cruel, brutal. You must know that in those days nearly all roads ran catawampus across the prairies, where everybody's cattle, horses, and sheep grazed together. Grandfather never came near enough with his wagon to be able to hit an animal with his whip that he did not give it a welt, and then laugh when the thing jumped. He always carried a "blacksnake" whip. The only way he knew of to play with me was to get me across his knee and spank me, laughing to see me squirm. I always tried to take it in fun, but it was a hard job. Wherever he be now, he may take it from me that I don't like him.

I ought to have said back there that, when I intimated to the head professor of English at the University of Chicago that I was about ready to be examined for my doctor's degree, he told me flatly that the University did not wish to give the degree to men of my age, forty-three. So I accepted the chair of English at Southwestern College and set about looking for an institution that would grant the degree to men of my age. The University of Denver took me on, and I received my degree there in 1903. I had to do, besides the two and a half years of residence at Chicago, two more years *in absentia*. I had to be in Denver for my examinations in my two minors—German and ornithology. They required me to read over six thousand pages of German, and the examination in that minor covered six solid days. Ornithology was, of course, play. At the University of Chicago I had to my credit twenty-two majors; besides I had taken a course in the History of Painting at the Chicago Art Institute, thinking that a professor of English should know something about Art. Among my majors was one course in philosophy, under Dean Tufts, because I believed that I must be able to include in my teaching something of the philosophy of literature. To be able to say something to my students on the parallel tendencies in both literature and art, I bought a hundred dollars worth of reproductions of famous paintings. With these I illustrate to my students the fact that Classicism and Romanticism always affected all lines of artistic production, whether in literature or art.

NOTES ON THE BIRDS OF DOUGLAS COUNTY, KANSAS

BY JEAN LINSDALE AND E. RAYMOND HALL

The aim of this paper is to place on record our observations that, excepting those obtainable from specimens collected, might otherwise not be available. The paper deals chiefly with occurrence and is wholly limited to birds collected and observed by us in Douglas County, Kansas, mainly, between September, 1919, and May, 1923. A few observations made after this time are included but all such are indicated by date. A total of 258 field-trips was made. These cover 231 separate days. Records were also kept of birds seen about the authors' homes in Lawrence. Nearly all of the northern part of the country was worked. Most work was done in spring and fall and least in summer. Of the 201 identifications 164 are based on specimens collected. All these specimens, numbering more than one thousand, are now in the collection of the University of Kansas Museum of Natural History at Lawrence.

The city of Lawrence is located in the north-central part of Douglas County on the Kansas River. Most of the work here reported on was done south, east and west of, and within ten miles of, Lawrence. The Kansas River, whose valley is three to six miles wide, forms most of the northern boundary of the county and is joined, eight miles south of Lawrence, by the Wakarusa River. The latter is a smaller stream that passes three miles south of Lawrence and runs east by north. Its valley widens out near the mouth and thus, there is much flat bottom land south and east of Lawrence as well as along the Kansas River. Some temporary marshes exist in the Wakarusa River Valley in rainy seasons. Probably less than half the upland, both west of Lawrence and north of the Kansas River, is in cultivation. Much of the remainder is pasture but several patches of the original prairie remain. This part of the area is rolling and cut by numerous ravines and small creeks. South of the Wakarusa River there is a range of hills, about 250 feet high, with about one-fourth their surface covered by brushy timber. Cattle are pastured on much of this hill land. Although the above mentioned divisions of the area intergrade, their boundaries are fairly well marked.

The direct course taken by the Kansas River to its connection, thirty miles away, with the Missouri River, helps to bring a large bird population to this vicinity. Many birds that occur in the area in winter are found regularly only along the Kansas River. Originally, game birds were abundant along this stream but hunting has greatly reduced their numbers. The numerous sand bars of the river, although

not as much frequented by shore birds as are the mud flats, nearly always have some birds in the proper seasons. The vertical cut-banks are used as nesting places by kingfishers and large colonies of swallows.

The Wakarusa River and small creeks also have steep banks but are so small that, aside from a few ducks, herons, and Spotted Sandpipers, most of the water birds found on them are stragglers.

Many water birds occur at Lake View which is five miles northwest of Lawrence. Ducks and sandpipers are especially common there. This ox-bow lake, formed by a change in the course of the Kansas River, is about one and one-half miles long and is of the same width as the river, that is, 75 to 200 yards. Its depth is less than six feet and the shore is flat and usually covered with mud. One end of the lake has so grown up with vegetation that it provides a good shelter for marsh loving birds. Due to the heavy shooting that takes place almost daily on the lake in fall, fewer birds stop there then than in spring.

The marshy ground on the Haskell Institute farm, just south of Lawrence, is, in rainy seasons, a good feeding ground for all kinds of marsh frequenting birds. Water stands in the drainage ditches and on the low ground that is not properly drained. Here, a heavy growth of native grass furnishes hiding places for such birds as ducks, rails, snipe, bitterns, marsh wrens, and several species of sparrows. These, in turn, attract many hawks and owls.

The river valleys in Douglas County are not heavily timbered. Along the Kansas River there is a narrow border of willows and cottonwoods and a few patches of other trees. This timber usually has a thick growth of underbrush and weeds which, nearly every year, produces a large crop of weed seeds that attract wintering sparrows. In this timber the waves of transients, which follow the streams, can, of course, more easily be seen in spring, when the vegetation is not dense, than in fall.

The hilltops as well as most of the valleys have been cleared for farming. Thus only the hillsides are covered with timber. This is of the red oak-hickory type. Most of the hillsides have limestone outcrops and, as a rule, the vegetation is not so thick there as it is near the streams. The hillsides are more quiet and less frequently disturbed by hunters and other persons than are the valleys.

The representative pasture near Lawrence, with its blue grass, its weed patches, its thickets of sumac and coral-berry, and its scattered group of trees, furnishes a variety of habitat. The pastures often

adjoin or include small patches of hillside timber. Nearly every pasture in the territory has a wooded ravine running through it. During the winter, loose flocks, containing many species of birds, travel up and down these ravines while feeding. However, these pastures furnish few desirable nesting sites and thus are chiefly used as feeding grounds and for protection in winter.

There are several abandoned roads near Lawrence. These are lined with rows of osage-orange which has made tangles of brush and these have practically been turned over to the birds. Several roads that are in use, have osage-orange and other brush along their sides and also furnish food, protection, and nesting sites for several species of birds.

Cultivation of the land in this vicinity has, in itself, affected a few species of birds and the draining of the low marshy ground along the Wakarusa has driven out nearly all the water birds that formerly nested there. Now, only a few of these species may be found, as transients, in favorable seasons. The planting of trees in parks, cemeteries, nurseries, around farm buildings, and along roads has helped to increase the number of bird individuals and probably the number of species. An * before the name of a species indicates that specimens were taken.

Annotated List

[The following list contains 201 named forms.—Ed.]

*Pied-billed Grebe. *Podilymbus podiceps.* Found commonly between March 28 and June 2 and between October 2 and 30. Seen on the Kansas River, at Lake View, and on small ponds.

Ring-billed Gull. *Larus delawarensis.* Flock of about 20 seen on April 30, 1920.

Franklin's Gull. *Larus franklini.* Small flocks seen May 2, 1920, and November 5, 1919.

*Black Tern. *Chlidonias nigra surinamensis.* Seen feeding over fields and on the lake at Lake View from May 5 to June 2.

Double-crested Cormorant. *Phalacrocorax auritus auritus.* Single individuals seen at Lake View on April 17, May 1, 8, and 15, and October 2, 1920.

Merganser. *Mergus americanus.* Found on Kansas River, January 11, 1920, and on Wakarusa River, May 9, 1921.

Hooded Merganser. *Lophodytes cucullatus.* Seen at Lake View, May 1, 1920, and on Wakarusa River, May 5, 1921.

*Mallard. *Anas platyrhynchos.* Transients noted from February 15 to May 6 and from October 30 to November 11.

GADWALL. *Chaulelasmus streperus.* One bird identified in bag of hunter on Haskell farm, March 15, 1921.

BALDPATE. *Mareca americana.* Found on March 28 and April 12, 1921, south of Lawrence and from April 10 to 24, 1920, at Lake View.

*GREEN-WINGED TEAL. *Nettion carolinense.* Seen from March 12 to April 28 and from September 8 to November 11.

*BLUE-WINGED TEAL. *Querquedula discors.* Common; seen from March 9 to May 21.

SHOVELLER. *Spatula clypeata.* Transients found from March 28 to May 15.

*AMERICAN PINTAIL. *Dafila acuta tzitzihoa.* Found between January 30 and May 5 and in the fall.

CANVAS-BACK. *Marila valisineria.* At Lake View on April 24 and May 1, 1920, and March 28, 1921.

LESSER SCAUP DUCK. *Marila affinis.* Found from March 25 (1921) to May 8 (1920), at Lake View and noted every spring on Kansas River near Lawrence.

CANADA GOOSE. *Branta canadensis canadensis.* Flocks seen and heard as they flew over Lawrence in spring and fall migrations.

*BITTERN. *Botaurus lentiginosus.* Found in the wet Haskell meadows between April 4 and May 12, 1922, and between October 3 and 28. One, of two seen, collected November 26, 1921.

*LEAST BITTERN. *Ixobrychus exilis.* One flushed at edge of lake at Lake View on June 2, 1920.

GREAT BLUE HERON. *Ardea herodias herodias.* Frequently seen on Kansas River in summer.

*GREEN HERON. *Butorides virescens virescens.* Arrived in 1921 on April 14. Latest fall record, October 30, 1920. Common summer resident.

*BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax naevius.* Found on March 27 and April 18, 1920; April 23 and 27, and May 2, 5 and 15, and September 13, 1921; and April 7, 17 and 29, and May 3 and 4, 1922.

*YELLOW-CROWNED NIGHT HERON. *Nyctanassa violacea.* A female shot in small grove of trees along Kansas River, two miles east of Lawrence, May 4, 1921. One year later, May 4, 1922, a male was collected in the same grove.

*KING RAIL. *Rallus elegans.* Frequently seen in wet Haskett meadows south of Lawrence between April 7 and June 4 and between Octo-

ber 17 and November 25. Egg, ready to be laid, taken from bird May 4, 1921.

*Virginia Rail. *Rallus virginianus*. Collected in sloughs south of Lawrence on May 4 and 14, 1921.

*Sora. *Porzana carolina*. Found in wet meadows south of Lawrence between April 22 and May 21. Fall date, November 9, 1920.

*Coot. *Fulica americana*. Found on rivers, creeks and at Lake View.

Wilson's Phalarope. *Steganopus tricolor*. Found between April 24 and May 14 at Lake View.

Woodcock. *Rubicola minor*. One bird seen on Haskell farm in swampy timber along Wakarusa River, October 3, 1922.

*Wilson's Snipe. *Gallinago delicata*. Common in wet places between March 16 and May 12, and between October 5 and November 6. Late dates, November 25 and 26, 1921.

*Long-billed Dowitcher. *Limnodromus griseus scolopaceus*. Three taken from flock of four April 5 on Haskell meadows and another from small flock at pond one mile west of Haskell farm on April 28, 1922.

*Pectoral Sandpiper. *Pisobia maculata*. Common transient in wet meadows south of Lawrence, at Lake View, and along Kansas River.

White-rumped Sandpiper. *Pisobia fuscicollis*. Seen at Lake View on April 10 and 17 and May 8, 1920.

*Least Sandpiper. *Pisobia minutilla*. Common transient. Found in flocks at Lake View, in Haskell meadows, and along Kansas River.

*Semipalmated Sandpiper. *Ereunetes pusillus*. Common transient.

*Hudsonian Godwit. *Limosa haemastica*. One collected from group of four at small pool of water three miles south of Lawrence on May 4, 1921.

*Greater Yellow-legs. *Totanus melanoleucus*. Six records between April 6 and May 14.

*Yellow-legs. *Totanus flavipes*. Common transient at Lake View and in wet meadows south of Lawrence.

*Solitary Sandpiper. *Tringa solitaria solitaria*. Found between April 12 and May 19. Fall date, September 13, 1921.

Upland Plover. *Bartramia longicauda*. Record: 1920, on April 25 and 30 and on June 4; 1921, on April 22, 26, and 29; and 1922, on April 6, 25, 28 and 29.

*Spotted Sandpiper. *Actitis macularia.* Seen from April 24 to October 10.

*Long-billed Curlew. *Numenius americanus.* One collected on Haskell meadows, April 4, 1922.

Golden Plover. *Pluvialis dominica dominica.* Flock of seven birds seen, April 6, 1922, on Haskell meadows.

*Killdeer. *Oxyechus vociferus.* Recorded between March 4 and December 4.

*Semipalmated Plover. *Charadrius semipalmatus.* Found along Kansas River and at Lake View between April 24 and May 15. Only fall record, October 30, 1920.

*Bob-white. *Colinus virginianus virginianus.* Common resident.

Prairie Chicken. *Tympanuchus americanus americanus.* One seen flying over a field two miles south of Lawrence on January 8, 1921.

*Mourning Dove. *Zenaidura macroura carolinensis.* Common in summer and frequently seen in winter. Nest containing three eggs found on May 23, 1920.

Turkey Vulture. *Cathartes aura septentrionalis.* Recorded between March 9 and October 23.

*Marsh Hawk. *Circus hudsonius.* Found between August 28 and May 12. Most common in October, November and March.

*Sharp-shinned Hawk. *Accipter velox.* Recorded on April 9 and 17, 1921, and May 3, 1920.

*Cooper's Hawk. *Accipiter cooperi.* Found frequently throughout the year.

*Red-tailed Hawk. *Buteo borealis borealis.* Common throughout the year. Nests in timber on hills and along streams.

*Western Red-tail. *Buteo borealis calurus.* Common in winter.

Harlan's Hawk. *Buteo borealis harlani.* Seen in winter.

Swainson's Hawk. *Buteo swainsoni.* April 12, 1922, only record.

*Rough-legged Hawk. *Archibuteo lagopus sancti-johannis.* Recorded between November 12 and April 21.

*Sparrow Hawk. *Cerchneis sparveria sparveria.* Found throughout the year. One pair nested, each year, in a cornice of a building on the University of Kansas campus. Several other pairs nested in the city of Lawrence.

Osprey. *Pandion haliaetus carolinensis.* One bird at Lake View, September 30, 1922.

*Barn Owl. *Tyto alba pratincola.* Recorded on March 9 and 30 and May 14, 1921, April 21, 1922, and September 20, 1923.

*Long-eared Owl. *Asio wilsonianus.* Found on April 14, 17 and 27, 1921.

*Short-eared Owl. *Asio flammeus.* Common each winter in tall grass on Haskell meadows and noted on other meadows not cut for hay.

Barred Owl. *Strix varia varia.* Permanent resident found in heavy timber along Washington Creek seven miles southwest of Lawrence.

*Screech Owl. *Otus asio asio.* Common resident.

Great Horned Owl. *Bubo virginianus virginianus.* Found throughout the year in timber along streams.

*Yellow-billed Cuckoo. *Coccyzus americanus americanus.* Common summer resident. Recorded between May 12 and September 21.

Belted Kingfisher. *Ceryle alcyon alcyon.* Found along the streams throughout the year but less commonly in winter.

*Hairy Woodpecker. *Dryobates villosus villosus.* Found in nearly all timber in county.

*Downy Woodpecker. *Dryobates pubescens medianus.* Common resident.

*Yellow-bellied Sapsucker. *Sphyrapicus varius varius.* Records are March 26 and April 12, 1922; January 15 and March 6, 1923.

*Red-headed Woodpecker. *Melanerpes erythrocephalus.* Common in summer and locally common in winters of 1922 and 1923.

*Red-bellied Woodpecker. *Centurus carolinus.* Found throughout the year.

*Northern Flicker. *Colaptes auratus luteus.* Found at all seasons.

Red-shafted Flicker. *Colaptes cafer collaris.* One record. December 2, 1923.

*Whip-poor-will. *Antrostomus vociferus vociferus.* Found in summer, in timber on hills and along streams. In 1922, first seen on April 25.

*Nighthawk. *Chordeiles virginianus virginianus.* Few seen except in migration seasons when frequent.

*Chimney Swift. *Chaetura pelagica.* Common in summer in neighborhood of buildings. Dates of arrival are: 1920, April 16; 1921, April 15; 1922, April 8; and 1923, April 16. Latest fall record, October 11, 1919.

Ruby-throated Hummingbird. *Archilochus colubris.* Common in summer.

*KINGBIRD. *Tyrannus tyrannus.* Common in summer, near houses and timber. Earliest spring record, April 12, 1922. Latest fall record, August 29, 1920.

*ARKANSAS KINGBIRD. *Tyrannus verticalis.* Seen along Kansas River northwest of Lawrence on May 15, 1920. A male shot three miles east of Lawrence along same river, April 29, 1922. Another seen at this place on May 7, 1922.

*CRESTED FLYCATCHER. *Myiarchus crinitus.* April 21, 1920, is earliest spring record for this common summer resident. Latest fall record, September 21, 1921.

*PHOEBE. *Sayornis phoebe.* Common in summer near culverts, bridges, and buildings as well as near cuts and rock ledges along streams. March 9, 1921, is earliest spring record. October 9, 1920, is latest fall record.

*OLIVE-SIDED FLYCATCHER. *Nuttallornis borealis.* Female shot in timber east of Lawrence, September 4, 1921. Another seen in timber near Lake View in first week of May, 1924.

*WOOD PEWEE. *Myiochanes virens.* Common in summer.

*ACADIAN FLYCATCHER. *Empidonax virescens.* May 6, 1920, earliest record.

*ALDER FLYCATCHER. *Empidonax trailli alnorum.* Collected May 6 and 8, 1921.

*LEAST FLYCATCHER. *Empidonax minimus.* Collected May 7 and September 21, 1921.

*PRAIRIE HORNED LARK. *Otocoris alpestris praticola.* Common in fields and often seen in roads.

*BLUE JAY. *Cyanocitta cristata cristata.* Found wherever there are trees but not common in winter.

*CROW. *Corvus brachyrhynchos brachyrhynchos.* Common resident.

*BOBOLINK. *Dolichonyx oryzivorus.* Seen in pastures south of Lawrence on May 9 and 20, 1920; May 8 and 14, 1921; and May 13, 1923.

*COWBIRD. *Molothrus ater ater.* No winter records between November 12 and March 5. Common during remainder of year.

YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus.* Flocks seen on April 24 and 25, 1920, and on April 25, 1922.

*RED-WINGED BLACKBIRD. *Agelaius phoeniceus phoeniceus.* Found in summer.

*THICK-BILLED REDWING. *Agelaius phoeniceus fortis.* Specimens collected but seasonal distribution not worked out.

*Meadowlark. *Sturnella magna magna.* Found at all seasons but more commonly in summer.

*Western Meadowlark. *Sturnella neglecta.* Records are: November 25, 1920 (collected); April 17 and 25, 1921, and November 12, 1921; and April 29 and 30 and May 7, 1922. A few pairs nested in pastures near Lawrence.

*Orchard Oriole. *Icterus spurius.* Common summer resident. None found later than August 29 (1920).

*Baltimore Oriole. *Icterus galbula.* Earliest record, April 24, 1920. Latest fall record, September 29, 1920.

*Rusty Blackbird. *Euphagus carolinus.* All records between November 6 and April 18. Roosted, in fall, in wet weadow land south of Lawrence.

*Bronzed Grackle. *Quiscalus quiscula aeneus.* Earliest spring record, March 9, 1921. Latest record, December 27, 1920. Common in summer, abundant in spring and fall.

Purple Finch. *Carpodacus purpureus purpureus.* Winter records, January 11, 1920, and November 12 and 20, 1921.

Crossbill. *Loxia curvirostra minor.* Flocks recorded between October 3 (1924) and April 6 (1920). In Lawrence, usually found feeding on seeds of pine trees.

*Goldfinch. *Astragalinus tristis tristis.* Common resident.

Pine Siskin. *Spinus pinus.* Common from January 10 to May 14 in spring of 1920.

*English Sparrow. *Passer domesticus.* Most abundant in vicinity of farm buildings.

*Lapland Longspur. *Calcarius lapponicus lapponicus.* Large flocks seen in fields south of Lawrence on January 11 and November 18 and 25, 1920.

*Vesper Sparrow. *Pooecetes gramineus gramineus.* Found as a transient. Seen most frequently at edges of fields and along roads. In 1920, 1921, and 1922, first recorded on March 27, 28, and 30, respectively. Latest spring records, April 23, 1920 and 1921. Fall records between October 4 (1919) and November 11 (1921).

*Savannah Sparrow. *Passerculus sandwichensis savanna.*

*Western Savannah Sparrow. *Passerculus sandwichensis alaudinus.* Both forms taken during migrations. Spring records, between March 10 and May 15. October 25, 1920, is latest fall record. Found in grassy fields.

Grasshopper Sparrow. *Ammodramus savannarum australis.* Recorded on May 1 and October 2, 1920.

*Leconte's Sparrow. *Passerherbulus lecontei.* Common in grassy meadows in spring and fall.

*Lark Sparrow. *Chondestes grammacus grammacus.* First recorded in 1920 on April 16; in 1921 on April 19; and in 1922 on April 15. Present throughout summer.

*Harris's Sparrow. *Zonotrichia querula.* Earliest fall record for this winter resident is October 9, 1920. Late spring records: May 9, 1920; May 14, 1921; and May 13, 1922.

*White-crowned Sparrow. *Zonotrichia leucophrys leucophrys.* Spring records: April 30, 1920; May 12, 1921; and March 22 and May 6, 1922. Fall records are October 2 and December 11, 1920.

*Gambel's Sparrow. *Zonotrichia leucophrys gambeli.* Eight spring records between March 30 (1922) and May 8 (1921). Fall records: October 16, 17, and 23, 1920; and October 22 and November 25, 1921.

*White-throated Sparrow. *Zonothrichia albicollis.* Spring records between March 30 (1922) and May 20 (1921). Found in fall between October 3 (1921) and December 11 (1920).

*Tree Sparrow. *Spizella monticola monticola.*

*Western Tree Sparrow. *Spizella monticola ochracea.* Both forms collected. Present in winter from October 25 (1920) until April 18 (1920).

*Chipping Sparrow. *Spizella passerina passerina.* Earliest arrival, March 6, 1924. Latest fall record, October 3, 1920.

*Clay-colored Sparrow. *Spizella pallida.* Collected in edge of patch of timber, two miles east of Lawrence on May 10, 1921 and April 3, 1922. Records at similar place along Wakarusa River, on Haskell farm, May 4 and 9, 1922.

*Field Sparrow. *Spizella pusilla pusilla.*

*Western Field Sparrow. *Spizella pusilla arenacea.* Most of those collected apparently intermediate between these two forms. Recorded between March 4 and October 30.

*Slate-colored Junco. *Junco hyemalis hyemalis.* Earliest arrival of this common winter resident, September 23, 1920. Late spring records: April 25, 1921 and April 30, 1922.

*Song Sparrow. *Melospiza melodia melodia.*

*Dakota Song Sparrow. *Melospiza melodia juddi.* Species found from September 26 (1920) until May 9 (1921).

*Lincoln's Sparrow. *Melospiza lincolni lincolni.* Spring records between April 3 (1922) and May 15 (1921).

*Swamp Sparrow. *Melospiza georgiana.* Recorded between March 13 (1920) and May 10 (1921) and between October 21 and December 2 (1920).

*Fox Sparrow. *Passerella iliaca iliaca.* Common winter resident. Earliest arrival, October 16, 1921. Latest record, April 19, 1921.

*Towhee. *Pipilo erythrophthalmus erythrophthalmus.* Common in summer and frequent in winter.

*Cardinal. *Cardinalis cardinalis cardinalis.* Common resident.

*Rose-breasted Grosbeak. *Hedymeles ludovicianus.* Found between April 25 (1922) and September 13 (1921). Often seen in shade trees in Lawrence.

*Indigo Bunting. *Passerina cyanea.* Common summer resident between April 30 (1920) and September 13 (1921).

*Dickcissel. *Spiza americana.* April 25, 1922, earliest record for this common summer resident.

*Scarlet Tanager. *Piranga erythromelas.* Found in oak timber on hills. May 8, 1920, earliest spring record.

*Summer Tanager. *Piranga rubra rubra.* Found in same places as Scarlet Tanager. Earliest record, April 29, 1922.

Purple Martin. *Progne subis subis.* Found commonly between March 18 (1922) and September 3 (1919).

*Cliff Swallow. *Petrochelidon lunifrons lunifrons.* Found in spring from April 29 to May 19. August 29, 1920, only fall record.

*Barn Swallow. *Hirundo erythrogastra.* Earliest records: April 23, 1920; April 22, 1921; and April 25, 1922. Late fall records, October 4, 1919, and September 21, 1921.

*Tree Swallow. *Iridoprocne bicolor.* Present as transient between April 24 (1920) and May 8 (1921).

*Bank Swallow. *Riparia riparia.* Nested in vertical banks along Kansas River. Earliest date of arrival, April 17, 1920.

*Rough-winged Swallow. *Stelgidopteryx serripennis.* Found with Bank Swallow. Earliest record, April 22, 1921.

*Cedar Waxwing. *Bombycilla cedrorum.* Fifteen records between January 1 (1920) and May 6 (1921).

*Northern Shrike. *Lanius borealis.* Seen on December 19, 1919, and one shot along a road, three miles south of Lawrence, on November 11, 1920.

*White-rumped Shrike. *Lanius ludovicianus excubitorides.* A male, shot November 25, 1922, was identified by Dr. A. Wetmore as belonging to this subspecies.

*Migrant Shrike. *Lanius ludovicianus migrans.* Common, in summer, along roads and in thickets in pastures. Winter records: December 27, 1920, and March 11 and 12, 1921.

*Red-eyed Vireo. *Vireosylva olivacea.* Common summer resident. Records between May 3 (1921) and September 17 (1921).

*Warbling Vireo. *Vireosylva gilva gilva.* Found between April 23 (1922) and September 21 (1923).

*Yellow-throated Vireo. *Lanivireo flavifrons.* Recorded May 8, 1920, and April 28 and May 14, 1921.

*Blue-headed Vireo. *Lanivireo solitarius solitarius.* Recorded, May 8, 1920; May 6, 10 and 15, 1921; September 13 and 24, and October 22, 1921; and September 20, 1923.

*White-eyed Vireo. *Vireo griseus griseus.* Found in summer at edge of timber on hills. Earliest arrival, April 15, 1922.

*Bell's Vireo. *Vireo belli belli.* First records of this common summer resident, May 3, 1920, and May 8, 1922. Late records, September 26, 1920, and September 13, 1921.

*Black and White Warbler. *Mniotilta varia.* Found only as transient. April 29, 1922, earliest record. None seen after May 18 (1920). Latest record, September 23, 1921.

*Golden-winged Warbler. *Vermivora chrysoptera.* One taken, May 2, 1921, three miles south of Lawrence on Wakarusa River. Believed to be first specimen collected in state.

*Nashville Warbler. *Vermivora ruficapilla ruficapilla.* Frequent transient. Recorded between May 7 (1922) and May 14 (1921). Fall records: September 24, 1921, and September 20, 1923.

*Orange-crowned Warbler. *Vermivora celata celata.* Common in spring. Recorded between April 21 (1922) and May 20 (1921).

*Tennessee Warbler. *Vermivora peregrina.* Common transient. Recorded between April 25 (1922) and May 23 (1920). September 17, a fall record.

*Northern Parula Warbler. *Compsothlypis americana pusilla.* Earliest record, April 13, 1921. Young birds, just out of nest, collected in timber twelve miles south of Lawrence on July 9, 1922.

Cape May Warbler. *Dendroica tigrina.* An adult male seen in timber along Kansas River northwest of Lawrence on May 15, 1920.

*Yellow Warbler. *Dendroica aestiva aestiva.* Common summer resident. Earliest record, April 24, 1920.

*Myrtle Warbler. *Dendroica coronata.* Found from April 17 (1920 and 1921) until May 17 (1920) and from October 3 (1920) until November 12 (1921).

MAGNOLIA WARBLER. *Dendroica magnolia.* Recorded on May 15, 16, and 17, 1920, and on May 7, 1921.

CHESTNUT-SIDED WARBLER. *Dendroica pensylvanica.* Seen feeding in bushes near the ground in a small patch of timber along Kansas River, three miles east of Lawrence on May 17 and 19, 1920.

*BLACK-POLL WARBLER. *Dendroica striata.* Found commonly from May 9 until May 23, 1920, and from May 12 to 20, 1921, and on May 10, 1922.

BLACKBURNIAN WARBLER. *Dendroica fusca.* Small group seen in trees in west part of Lawrence on September 9, 1920.

*BLACK-THROATED GREEN WARBLER. *Dendroica virens.* Collected in timber along Wakarusa River on May 7 and 8, 1921, and on May 7, 1922.

*PALM WARBLER. *Dendroica palmarum palmarum.* Seen in edge of timber near Lake View, May 8, 1920. Collected in narrow fringe of willows, skirting Kansas River, east of Lawrence on May 6, 1921; April 29 and 30, 1922; and May 3 and 5, 1922.

*OVEN-BIRD. *Seiurus aurocapillus.* May 6, 1922, earliest record. Records for September 13, 17, and 21, 1921.

*WATER-THRUSH. *Seiurus noveboracensis noveboracensis.* A female, collected May 21, 1921, was identified by Dr. A. Wetmore as belonging to this form. This is believed to be the first record for the taking of this subspecies within the state of Kansas.

*GRINNELL'S WATER-THRUSH. *Seiurus noveboracensis notabilis.* In all, ten spring records in 1920-21-22. Earliest, April 30, 1920, and latest May 22, 1920.

*KENTUCKY WARBLER. *Oporornis formosus.* Found in timber on hills and along streams from May 4, 1921, until September 13, 1921. Young birds, just leaving the nest, collected on July 9, 1922, on low timbered ground twelve miles south of Lawrence.

*MOURNING WARBLER. *Oporornis philadelphia.* Found in weeds along streams on May 17, 19, and 23, 1920.

*MARYLAND YELLOW-THROAT. *Geothlypis trichas trichas.* Common summer resident. April 21, 1922, earliest record and September 13, 1922, latest.

*YELLOW-BREASTED CHAT. *Icteria virens virens.* Found, earlie t. on April 29, 1920. Latest record, August 29, 1920. Common all summer.

*WILSON'S WARBLER. *Wilsonia pusilla pusilla.* Spring records between May 2 (1921) and May 17 (1920). Only fall records, September 9, 1920, August 23, 25, and September 17, 1921.

*Pileolated Warbler. *Wilsonia pusilla pileolata.* A female collected on May 2, 1921, was identified by the U. S. Bureau of Biological Survey as a Pileolated Warbler.

*Redstart. *Setophaga ruticilla.* Found in timber on hills and along streams all summer. Early and late records are April 30, 1920, and September 17, 1921.

*Pipit. *Anthus rubescens.* Especially common during an outbreak of the green bug in fields near Lawrence in the spring of 1921. Found from March 12 until May 19 of that year and usually seen in large flocks.

*Mockingbird. *Mimus polyglottos polyglottos.* A few found in summer, along roads near Lawrence, from April 15 (1921) until September 13 (1921). One seen in a patch of timber, four miles south of Lawrence, on December 22, 1919.

*Catbird. *Dumetella carolinensis.* Common summer resident. Recorded between April 25 (1922) and October 4 (1919).

*Brown Thrasher. *Toxostoma rufum.* Common summer resident. Earliest record, April 6, 1922. Latest record, October 4, 1919. One seen on October 2, 1920.

*Carolina Wren. *Thryothorus ludovicianus ludovicianus.* Common resident.

*Western House Wren. *Troglodytes aedon parkmani.* Common in summer. Dates of arrival for 1920-21-22-23 are: April 15, 13, 10, and 9, respectively. October 9, 1921, latest fall record.

*Winter Wren. *Nannus hiemalis hiemalis.* Found on January 9, 1923; March 30, 1921; and on April 18, 1920.

*Short-billed Marsh Wren. *Cistothorus stellaris.* Collected April 29, 1921. A group of six found in brush pile along ditch, May 10, 1921. These birds were singing. Another shot, in tall grass in meadow, two miles south of Lawrence, on October 25, 1920.

*Prairie Marsh Wren. *Telmatodytes palustris iliacus.* Found on April 29, and May 7, 8, 14, and 19, 1921, and May 8, 1920. Found at Lake View and on wet ground south of Lawrence.

*Brown Creeper. *Certhia familiaris americana.* Common winter resident between October 16 (1921) and April 18 (1922).

*White-breasted Nuthatch. *Sitta carolinensis carolinensis.* Found frequently throughout the year.

*Red-breasted Nuthatch. *Sitta canadensis.* Recorded on March 27 and May 6, 1920, and March 3, 1924. On the latter date one was

caught with bare hands while it rested in an old Cardinal's nest of the previous season.

*Tufted Titmouse. *Baeolophus bicolor.* Common resident.

*Chickadee. *Penthestes atricapillus atricapillus.* Resident.

*Long-tailed Chickadee. *Penthestes atricapillus septentrionalis.* Found in winter.

*Golden-crowned Kinglet. *Regulus satrapa satrapa.* Collected on March 8 and December 27, 1921, and locally common in winter between these dates.

*Ruby-crowned Kinglet. *Regulus calendula calendula.* Common transient. Recorded between March 27 (1920) and May 14 (1921) and between September 17 (1921) and October 23 (1920).

*Blue-gray Gnatcatcher. *Polioptila caerulea caerulea.* Frequent summer resident between April 2 (1920) and August 29 (1920).

*Wood Thrush. *Hylocichla mustelina.* Common summer resident. Recorded between April 26 (1922) and September 17 (1921).

*Gray-cheeked Thrush. *Hylocichla aliciae aliciae.* Found from May 2 to 19, 1921.

*Olive-backed Thrush. *Hylocichla ustulata swainsoni.* Common transient. Present, in 1920, from April 29 to May 23, and on September 9.

*Hermit Thrush. *Hylocichla guttata pallasi.* Found, near ground in timber, frequently in spring. Dates of occurrence: 1920, April 10 and 18; 1921, March 28 and April 4, 6, 8, 9, 10. 14, and 17; 1922, April 5 and 29.

*Robin. *Planesticus migratorius migratorius.* Common summer resident. Infrequent in winter.

*Bluebird. *Sialia sialis sialis.* Common summer resident and found in winter.

Berkeley, California, December 20, 1925.

THE WILSON BULLETIN

Published at Sioux City, Iowa, by the Wilson Ornithological Club.

The present editorial organization is as follows:

T. C. Stephens, Editor-in-Chief, Sioux City, Iowa.
Prof. Myron H. Swenk, University of Nebraska, Lincoln, Nebraska.
Prof. Gordon Wilson, Bowling Green, Kentucky.
Mr. Wm. I. Lyon, Waukegan Illinois.
Mr. Walter W. Bennett, Sioux City, Iowa.

The subscription price in the United States is $1.50 a year, and 50 cents a number; in all other countries of the International Postal Union the price is $2.00 a year, and 60 cents a number. Subscriptions and orders for single copies should be addressed to the Secretary, Prof. Howard K. Gloyd, State Agricultural College, Manhattan, Kansas, U. S. A.

EDITORIAL

We regret to be unable to announce the time and place of the next annual meeting. It will probably be Nashville, Tennessee, but official action has not yet been taken.

In Mr. Burleigh's article in the last number of the WILSON BULLETIN (March, 1927) the date for the Dickcissel (page 18, line 35) should have been May 4, 1923, instead of March 4.

During the summer Secretary Gloyd's address will be: University of Michigan Biological Station, Cheboygan, Michigan; after August 15 his permanent address will be: Kansas State Agricultural College, Manhattan, Kansas. From the middle of June to the middle of August the Editor expects to be conducting a class of students through Minnesota, North Dakota, Montana, Yellowstone Park, and the Black Hills of South Dakota. Mail addressed as usual will be forwarded.

The Editor feels somewhat inclined to offer an apology for the lankness of this page in this issue. A variety of other duties has made it a sufficient burden to carry on the ordinary routine of copy-editing, proof-reading, make-up, etc., without making any special effort to fill this page. Sometime, if we can find time to write about it, we would like to tell the readers just about how much editorial time and work go into the BULLETIN for each issue.

GENERAL NOTES

Conducted by M. H. Swenk

A Second Record for the Red Phalarope in Kansas.—On October 25, 1926, a male Red Phalarope (*Phalaropus fulicarius*) was taken in Franklin County, Kansas, by one of my students, Mr. Wesley Clanton. This is the second record of this species from the state. The first, as reported by Bunker (1913, Kansas Univ. Sci. Bul. 7:137-158), was a female secured at Lake View, Douglas County, November 5, 1905 by E. E. Brown. The measurements in millimeters of the Franklin County specimen follow: Length, 215; wing, 129; tail, 62; head, 28; bill, 23; tarsus, 21; and middle toe, 21.—Howard K. Gloyd, *Ottawa, Kans.*

A Note on a Habit of the Tufted Titmouse.—While walking through the woods looking for Crows' nests about the first of last May, I came upon an unusual sight. On a branch of a tree a few feet from the ground sat a Woodchuck (*Marmota monax*), while bobbing up and down above it a tufted Titmouse (*Baeolophus bicolor*) was engaged in plucking hair from its back. On a near-by twig the bird's mate was perched, with its mouth already full of hair, and in a few minutes they flew away together. Since the use of cattle hair for nest lining by the Tufted Titmouse has been observed and recorded (Davie, 1889; Goss, 1891) it is probable that this was to be used for the same purpose.—Ward Reed, *Princeton, Kans.*

The Orchard Oriole in Clayton County, Iowa.—The Orchard Oriole (*Icterus spurius*) is listed in Anderson's "Birds of Iowa" as a common summer resident in all parts of Iowa. That is hardly the case in this (the northeastern) corner of the state. While uncommon enough even in migration, I had the pleasure of finding a nesting pair in 1926, at Giard, that I believe to be the first definite nesting record for Clayton County. The male was in the plumage of the second year, which was highly developed, with a large black throat patch and faint traces of chestnut. The nest was cleverly hidden, thirty-two feet up in a pine, and was woven entirely of grass, with no other lining. It was discovered on June 27, the two young left it on July 6, and I collected it a few days later.—Oscar P. Allert, *McGregor, Iowa.*

The Baltimore Oriole Wintering in Ohio.—On January 3, 1927, a male Baltimore Oriole (*Icterus galbula*) appeared in my garden, feeding upon frozen grapes and berries of the Deadly Purple Nightshade (*Atropa belladonna*). He was a rather disconsolate looking bird, seemingly very weak and lame, yet withall a beautiful sight in his bright orange and black garb, against the beautifully white back-ground of freshly fallen snow. I am of the opinion that it is the same bird that was rescued from the claws of a large Persian cat on November 1, 1926. This bird was slightly injured and lame. I attempted to get him, if possible, and doctor his injury, but he would always hop just beyond my reach. He was terribly frightened at the time, and kept close to the ground, hiding in the grape vine. After a while, he flew away. I saw him again on November 2, 1926.—Mrs. Howard Smith Benedict, *Lakewood, Ohio.*

The Evening Bath of a Flock of Scissor-tailed Flycatchers.—One of the prettiest sights I have ever witnessed in bird life was the evening bath of a

flock of Scissor-tailed Flycatchers (*Muscivora forficata*). On a day in mid-September a dozen or more of these lovely birds had gathered in the little willows growing in a small pond, and for some time had been sitting quietly. Suddenly one swooped down to the water, but came up without quite touching it; another did the same, and then another. Finally, one brave bird splashed its breast into the water and flew up to a twig, where it shook itself and began to preen its feathers. Whereupon they all followed suit, sometimes singly, sometimes two or three at a time, darting down quickly—a sudden dip into the water and then up again. The colors on their sides and under their wings shone pink and salmon and ruby in the late afternoon light. It was a rarely beautiful sight—the exquisite birds in their fairy-like evolutions.—Margaret Morse Nice, *Norman, Okla.*

On the Nesting of the Blue Jay.—In April, 1925, a pair of Blue Jays (*Cyanocitta cristata cristata*) build a nest in a small evergreen tree about five feet from a garage window. To observe the nest the window was covered on the inside, excepting for a one inch space which was cut out of the pane. The tree was about twenty feet from the highway. The Jays were first observed feeding each other on March 16. Nest building was started on April 7, and was completed on April 12. It was a typical Blue Jay nest, composed of interwoven rootlets in a crotch and plastered with mud in the bottom. The upper part was built of twigs. The first egg was laid April 16, the second at 10:30 A. M. on April 19, the third on April 20, the fourth on April 21, and the fifth on April 23. Four of the eggs hatched on May 7, and the remaining egg hatched on May 8. The first evidence of feathers was on May 14. The young birds first called for food in a very faint and high-pitched tone just audible five feet from the nest, on May 14. The nest was destroyed shortly thereafter by cats, assisted by Sparrow Hawks. The female Jay was not seen afterwards. The male Jays remained in the locality for several days and then disappeared.—E. C. Hoffman, 1041 *Forestcliff Drive, Lakewood, Ohio.*

Birds Excited by a Snake.—While out on a bird tramp, on September 12, 1926, as often happens, we walked for a long distance through what was good territory without seeing a single bird. Then not one, but eight appeared almost at once. First we heard the low call note of the Brown Thrasher and discovered one on a low branch a few feet above the ground, moving slowly down the branch. Just below it was a brilliant red Cardinal. On a plant a foot or so away and a few inches above the ground sat a Catbird. On the ground was a second Brown Thrasher, her feathers more or less rumpled and her wings outspread. She moved backward and forward, beating the ground now and then with her wings somewhat as the Mockingbird does in its courting dance. In a moment her mate joined her on the ground, his wings also outspread. Meanwhile a pair of Hooded Warblers were flying back and forth over the ground near the Catbird and Thrashers. At least one Wood Thrush was watching proceedings from a low limb close by. Then from somewhere on the ground near the Thrashers a Carolina Wren appeared, its plumage so ruffled that the eye-line scarcely showed, and only its tail-tilt proclaimed it to be a Wren. Except for the call notes of the Brown Thrashers that were first heard, none of the birds uttered a sound.

After watching for a few moments and being unable to see the cause of the gathering, we approached near enough to frighten the birds away. At first we could see nothing to cause so much excitement; then we discovered, as we had suspected, a copperhead snake, perhaps twelve inches long. The snake, blending so well in color with the dead leaves of the ground as to be hard to see, even when we knew it was there, lay irregularly coiled, its head flattened down on the body and so motionless as to appear dead. The birds meanwhile utterly vanished. BERYL T. MOUNTS, *Macon, Ga.*

Some Notes on Mutilated Birds.—In the first week in August, 1924, I saw a Vesper Sparrow (*Pooecetes gramineus gramineus*) that seemed to be rather weak, and therefore I made an effort to capture it. As I got nearer to the bird it flew about fifteen rods in the meadow, and it was easily captured. Upon examining it, I found that the bird was without a bill, but for how long, I could not tell. Its tongue was exposed, and how it managed to gets its meals on insects or seeds is something to wonder about. I put it in a cage and tried to feed it, but its increasing weakness made that impossible, and it died a few hours after having been captured. This was in Luce County, Michigan.

A few days before getting the Vesper Sparrow without the bill, I saw a bird in a very unusual action. It appeared as if it was tied to a string and had only a few yards to range, like a cow when tied to a stake in the pasture. I at once ran and captured it, and found that half of its right wing was missing, which caused it to be weak on the wing. Its longest distance of flight was not over two feet. Just how long this bird had been this way, and where it was when it happened, is a mystery. In reply to a letter sent to the Biological Survey, I was informed that if I was not able to care for the bird, it had better be killed. I kept the bird and it lived until about April 6, 1926. I have kept a record of what I took to be of the most interest, and am planning on summing it up for a future number of the WILSON BULLETIN. These notes are mostly on its molt, song, and food—OSCAR M. BRYENS, *Three Rivers, Mich.*

Franklin's Gulls in Northwestern Oklahoma.—During the summer of 1925, Franklin's Gulls (*Larus franklini*) were with us more than usual. About 5,000 appeared in early July and among them were a goodly number in immature plumage. During the middle of August a good shower filled a dry pond near our house, and this was used by about a thousand gulls as their headquarters. They made a very pretty sight as they stood in the shallow water with their heads all in one direction against the wind. There was a constant hubbub of mewing and squalling amongst them. Some birds would be flying up to soar in the air above, while others would be sitting down with the flock. Some of them would go through intricate acrobatic aerial maneuvers, pitching and diving, while two different individuals actually banked their wings until they were in a vertical position and then turned over and floated on their backs upside down, righting themselves with a flip as they came on down to the water. The birds seemed much interested in fixing up their plumage and pulled out so many feathers in the operation that the border of the pond was completely lined with them. They ranged from little downy feathers a half inch long up to quills from the wings; most of them, however, were about two inches in length.

The gulls were very assiduous in their search for grasshoppers, and there was a noticeable diminuation in the abundance of these insects as a result of

their labors. Most of their hunting was done in the cooler parts of the day—in the morning and evening. About sundown they would come trooping back, in long straggling lines. During the hotter part of the day the gulls were far aloft, sometimes getting so high up in the sky that they became merely faint specks which one could see only as they turned in the soaring and their white plumage glinted in the sunlight. In other years when they have been in abundance later in the season I have seen the air for miles fairly alive with these soaring specks. The beneficial character of the gulls is well understood hereabouts and everyone is their friend.—WALTER E. LEWIS, *Gate, Okla.*

Bird Groups During Migration.—Do birds preserve the family colony and the neighborhood group when migrating? In the late summer and early fall it is usual to see the birds mobilizing for the journey south. The Yellow-breasted Chat, the Catbird, the Brown Thrasher, the orioles, the flycatchers, and some others are usually found in family groups. The Robin and to some extent the Bluebird, the Meadowlark, and the Sparrows are usually found in neighborhood groups. The Vesper, Field and Chipping Sparrow population of a farm, or of several adjacent farms, form a neighborhood group and use a common feeding ground until they leave for the south. Some days, during the high tide of migration, their territory may be over-run with groups of migrant sparrows, but little coalescence is noted in the groups as they feed and rest in the stubble fields and thicket borders. The Chipping Sparrows sometimes may join with a company of migrant Kinglets. The Meadowlarks mobilize in some grassy meadow or pasture for the late summer molt. They are not much in evidence, and will only take to wing to escape some danger. But, with the completion of the molt, they are again active and roam over considerable territory.

In central Ohio the breeding Song Sparrows do not seem to migrate in any noticeable numbers, and I am persuaded that many of them have never traveled a mile from their home environment. In some favorable association on the farm they nest and rear their young, and we see them in that association every day throughout the year. During the fall, and yet more often in the spring migration, I have observed groups of migrant Song Sparrows feeding near their home. The local birds do not coalese with these groups, but keep on the outskirts. When the migrants are disturbed they usually fly to an adjacent field or thicket, and just as quickly the local birds fly to their accustomed cover and hiding places.

The Fox, White-throated and White-crowned Sparrows come to us as migrants, in companies of six to one hundred. The Fox Sparrow affords the best opportunity for a study of the migrant group. They are usually present in greater numbers, and their manner of feeding in the open woods makes the observation of them easy. A few warm days and nights in middle March brings waves of them, and if they are checked by a north wind, they stay until the next favorable weather. There may be hundreds of these birds in a wood lot, but the group outlines can be clearly drawn and the organization is held intact. These groups work in lines with the individual birds close enough, so the whole body of leaves is moved. The line is often zig-zag: one group that is more energetic or does not have so many leaves to move, may get ahead of their neighbors. The Robins work the woods the same way but use their bills to move the leaves.—CHARLES R. WALLACE, *Delaware, Ohio.*

BIRD BANDING NEWS

Conducted by Wm. I. Lyon

THE FUN OF BANDING CHIMNEY SWIFTS

BY CONSTANCE AND E. A. EVERETT

The Rector of the Episcopal Church, otherwise known as "Parson" Brandon, reported having discovered a flight of Chimney Swifts entering the church chimney; we proceeded to go after them.

A trap was built like that described in Bird Banding Circular Number 19, excepting that the birds were discharged through one opening only, and the carpenters having forgotten to line it, afterward used the dark building paper as an outside cover instead. However, we found no birds injured by the wire mesh. A scaffold was built around the chimned to the top, about sixty feet above the ground, then the trap was hoisted up and fastened to this scaffold for the night.

A few minutes before daylight, on the morning of September 8, 1926, Ralph and Rolland Lorenz, Eagle Scouts, climbing the scaffold, quietly placed the trap "on location" on the chimney top and attached the gunny sack in position to receive the birds. Nearing the top, the scouts could hear the muffled beating of wings, and twitterings of the moving birds within the chimney. This ceased as the trap closed over the chimney top, and all was quiet for a few moments; then, the sounds beginning again, there was a sudden rush of birds through the trap into the receiving bag.

When this bag was filled, one scout slipped his hand through its entrance and covered the bottom of the discharge pipe to stop the flow of birds. (There should be a valve at this point to be operated from the outside.) The bag, with its quota of birds, was removed by a second scout while another was placed in position by a third scout. As the sack of birds was lowered to the ground by the first scout, the other end of the rope was bringing up empties to the top.

At the foot of the scaffold, the birds were received by the Parson and a fourth scout, passed to another scout inside a six-foot house trap, which was used as a receiving cage, and the whole covered with a large tarpaulin which darkened the cage and kept the birds quiet.

In less than five minutes, with but one casualty, one hundred sixty-four Chimney Swifts were inside of that cage, clinging to its walls of wire mesh like a swarm of bees, except that though densely massed, they were clinging to the wire and not to each other. A few were at all times on the wing, as they changed from one group to another, bewildered, perhaps, but not in the least frightened. Most of them, however, promptly alighted and tucked their heads under the wings and tails of those birds above them, until the inner walls of the cage took on the appearance of being shingled with birds.

The scout within the house trap began gently to separate individual birds from the mass, placing a few at a time in an ordinary receiving cage, and in an

old minnow bucket in lieu of another, passing them to the banders outside. One scout handled the receiving traps from the house trap to the banders, another opened the bands, and still another made the records. Miss Constance and the Parson, a fourth scout and E. A., in pairs, did the banding; one of us holding the bird and stretching out the short fat leg, while the other partner fastened the band in place. The stubby, grublike legs made banding very difficult, yet, in less than an hour, all the birds were again at liberty.

These swifts were very quiet, and apparently comfortable at all stages of the game. When held in the hands they would snuggle between the fingers confidingly; and when held against the clothes they would wriggle under the folds of the garments and contentedly go to sleep. We laid some of them on the steps, after banding them, and they remained as placed, except that occasionally one would sleepily open an eye as though inquiring what all the fuss was about. At one time we had a row across the steps, formed by placing the first bird then pushing him forward with the second when it was laid down and so on with the third and others, as a child pushes a string or train of dominoes. When finally the first bird was pushed over the end, it dropped nearly to the ground before catching itself to fly away. When we tossed the banded birds in the air, they generally fell some several feet before opening their wings to zoom into the upper air.

We were so interested and excited over handling so many and to us, new, birds in so short a time, that we completely overlooked our cameras, and therefore planned our picture taking for the next day.

On the following morning, everyone was there, bright and early, but after a long wait, with no birds forthcoming, we began to wonder, feeling certain that the birds were there, for at least fifty had left the chimney the morning before, after we had removed the trap thinking all were gone. Also, the Parson had seen a great many return to the chimney the night before.

Using a reflector for lighting, we could see that there were some birds in the chimney, so we built a light fire at the base—no birds. We then weighted a cord and let it down the flue, tied a crumpled newspaper to it and dragged it up to the top—still no birds. Nothing we could think of would start them and there was nothing to do but wait. As the outer air warmed up under the rising sun, suddenly the birds started. However, there were but a few, and only one wore yesterday's band, for alas, we had come in the eleventh hour of the last day of migration; no other swifts having been seen there or elsewhere about, since. We wondered, too, if swifts migrate at night, as we believe that many more entered the chimney the night before than came out in the morning.

Since there were so few birds, we took the time to enjoy playing with them. Miss Constance and the boys tried wearing them either singly as a brooch, or collectively as a breast plate; and always the birds snuggled down as though perfectly willing to join the game, provided their naps were not interfered with. Finally some passing school girls were adorned with live breast pins to take home for show, while several birds, clinging to Constance's coat rode many blocks in the car, and, scolding, had to be dragged off to their liberty.

Waseca, Minnesota.

SOME RETURNS FROM BIRD BANDING

BY MRS. MARIE DALES

No one but a bird bander can know how eagerly I awaited the coming of spring, and the returning birds, some of them banded by me the previous year. How many would come back to the old familiar haunts? Would my Catbird with a squeaky voice, return to take up his singing post in the little tree near my breakfast window, and sing his heart out to the same mate of the year before? Return he did, in the meantime his voice had become normal. I was not able to determine whether he had the same mate, for he did not come back to nest in the same place, consequently I lost trace of the pair.

The number of returns was somewhat of a disappointment. Out of 170 birds, or 17 species, only 12 individuals representing three species returned to my traps. They were six Robins, five Brown Thrashers, and four Catbirds. These 12 individuals repeated 46 times during the season.

My first return, a female Robin was the first Robin I banded the previous spring, a truly interesting coincidence. The next return Robin wore a bright and shiny band; here, I thought is a bird that has been banded on his way north. Imagine my surprise when I found that he was one of the first birds I had banded. How he had managed to keep his band so fresh and clean, I do not know. It leads one to believe that some birds are especially tidy in their habits. Repeatedly I saw four other species, that I am quite certain were birds of my banding. There were two other returns, one a male Robin which met death as he flew into a wire clothes line in a neighboring yard, the other a Brown Thrasher, caught in a rat trap under a porch at the home of Mr. Kirk, on Gilman Terrace. A wire netting surrounding an old tennis court at 110 Twenty-fourth street, I am reasonably sure was responsible for the death of two other birds of my banding, a Catbird and a Yellow Warbler.

Each spring there is a period of warfare between the Bluebirds and the Purple Martins, which finally subsides as each become engrossed with family affairs. When the Bluebirds retired to the woods with their first brood, the martins became imbued with a "when-the-cat's-away-the-mice-will-play" spirit, and did such unusual things, they alighted on the sparrow trap, and on the pedestal food table, they waddled around the court, loking much like a small boy wearing father's long coat. Twice I chanced to be looking as one entered the Bluebird box; in each instance I was fortunate in catching the bird before he got away. Each bird was presented with a shiny band. These two were the only martins I was able to band, for all of a sudden they reverted back to their former mode of living; not again did I see one alight on any low object as they did during the short period of reveling. Try as I would, I could not trap another martin by any method.

Throughout April great numbers of Cedar Waxwings came and went. I tried every kind of bait that I had ever heard of, but I was not successful in trapping a single bird. One morning six sat in a row on the fence, and looked so longingly at the water in the pool, but they dared not brave the trap. One pair has nested in this locality for the past three years. I have not been so fortunate as to find the nest. In August of each year I have seen a young Cedar-bird in my yard. Last August I was fortunate enough to see one go under the trap. I was so excited I could scarcely pull the string. I know now what is meant

when a hunter says he had buck fever. This was the only Cedar Waxwing I was fortunate enough to band.

Last year I was quite sure that my happiness would not be complete until I had banded a Meadowlark. One old fellow strutted about the place all summer, never once deigning to go near the traps. Imagine my delight one warm day last spring when he walked under the trap and I pulled the string. I was not so delighted a moment later when he gripped my thumb in a vise-like clutch that drew blood, besides his unpleasant and wicked grip I discovered that he was covered with vermin. I banded and released him with dispatch, I assure you. Later in the season I got his wife and two babies. They were better behaved. Often, during the summer I saw the male walk around the pool, never once daring to venture under the trap. I regretted his reluctance for if ever a bird needed a bath it was he. In a trap on the fence I kept nesting material, cotton, string, and colored yarns. This has proved to be the best kind of bait for Orioles and Kingbirds. By this method I was fortunate in trapping the two female Orioles, Baltimore and Orchard. A pair of Arkansas Kingbirds nested in an elm just across Kennedy Drive. They helped themselves quite freely to the nesting material. One day I thought I had him, but he proved too quick for me, after that he very cleverly saw to it that I did not have another opportunity to pull the string on him; he reached in from the outside and got the material he wanted. I failed in my attempt to trap and band these birds.

Later a male of the other Kingbird came into the B trap, when I discovered him he was flying around under the top of the cage, imagining himself a prisoner, he did not have the sense to drop down and go out the way he came in. He was very angry about his humilitating experience. While being banded he displayed his orange crest. An immature Kingbird came into the same trap a little later. These were the only birds of this species to receive bands.

Usually I keep a crust of bread floating in the pool. One day I chanced to see a female Grackle going in for some of the moistened bread. I pulled the string, trapped, banded and released her. Half an hour later the male came. He picked up a dry crust near the sparrow trap, took it over to the pool and dipped it up and down to moisten it. He too received a band.

In the fall of 1924 I banded twenty-eight Harris's Sparrows. On May 12 the following spring only two of this species presented themselves at my trapping station, neither one of them being banded.

Only twice have I seen a real sick looking bird. The first one was a male Cowbird, with ill kept and ragged plumage; after a bath he flew to a nearby tree, where he rested for a long time. The other was a Chipping Sparrow, three toes of the left foot, the outer toes of the right foot all missing. The tip of the lower mandible was gone, and the upper mandible broken off almost back to the nostril. Its plumage was ill kept. There came under my observation an immature Bluebird with a deformed foot. The claws on the outer toes of the right foot, and the first joint of the middle toe were missing. The remainder of the toe was doubled back on the ball of the foot. One day three immature Catbirds came into the trap at the same time, all of one brood, apparently. All had slightly longer and decidedly hooked upper mandibles. Two of them repeated the following day.

I have noted Robins with no white in their tails some showing the faintest trace, a few others with the white graduated on five feathers on each side of the

tail. One Robin had a perfect fan-shaped tail with the ordinary white marking on the two outer tail feathers. In a few specimens the white eye-ring was absent, in others it was very pronounced. One brood of young Thrashers were of a decidedly darker shade of brown in plumage.

The past year with its high winds, hail, and heavy rainfall, proved most disastrous to nests and young birds, and to adults as well. The Mourning Doves suffered particularly, their nests being so flimsy. One pair finally took possession of an abandoned Robin shelter, which in this particular case did not better conditions any, for the teriffic hail storm late in September so frightened the young birds that they hopped out of the nest. I found one of the young birds that same night, brought it into the house where I kept it till the next morning, when I banded and released it. That same morning my neighbor found the other bird, all but dead, a victim of the raging elements. Later in the day I found the mother Bluebird, dead, both wings broken by the hail.

My experience in bird banding has raised this question: Do the adult birds go south in advance of the young? In 1924 I banded all birds on the right leg, in 1925 on the left leg. Toward the latter part of July and August, it struck that I very seldom saw a bird banded on the right leg, either in vicinity of my traps, on my walks in the park close by, or afield. I believe the theory has been advanced, that they go into seclusion during the molting period. Why, then, did I not see them in the secluded places? On the morning of August 27, as I idly watched the congregating martins I became conscious of the fact that there were so few full plumaged males among them. In a flock of one hundred there were but seven. Did the majority of the males go south earlier?

What returns from 383 birds banded in 1925, will the coming spring bring in its wake?

Sioux City, Iowa.

NECROLOGY

Leroy Titus Weeks was born February 1, 1854, at Mount Vernon, Iowa. With his parents, he removed by covered wagon to Osborne, Kansas, in 1872, in which neighborhood his life was spent until he returned to attend Cornell College, Mount Vernon, from which he received the degree of B. A. in 1883. He was ordained to the ministry of the Methodist Episcopal Church and spent two years as a home missionary in the Salmon River Mountains in Idaho. He was married to Ida Anna Alborn at Smith Center, Kansas, in 1894. After her death, in 1913, he married Ada Pauline Kuhn, of Evanston, Illinois, who survives him.

As an author, Dr. Weeks published two volumes of poems and a Handbook of the Sonnet. At the time of his death he was contemplating the editing of another book on the Sonnet, an anthology of bird poems, and a handbook of Grammar.

Dr. Weeks may be accorded a prominent place in Iowa in two fields of activity: that of the poet and that of the ornithologist. It is the purpose of this sketch to treat of him in the latter field. He was not only a bird lover, but a bird student. He was indefatigable in his efforts to get out in the field and get his knowledge of birds first hand. The migration season found him in the field a great deal of the time, and despite his years, he would tire many a younger

man on these tramps. It was only a year ago when he told me of having walked nearly twenty miles taking the Christmas Bird Census which is sponsored annually by *Bird-Lore*. He was then past seventy years of age.

It has been my great pleasure to go with him on several early morning hikes in the field, and I can see him yet trudging along beside me, each of us holding an end of a stick in the middle of which was hung a suit-case containing bread, bacon, eggs, a skillet and a coffee pot with which we intended to breakfast. We never paused to rest but attention was given to some bird note, or some sudden movement in the underbrush nearby.

Those of us who frequently attended the sessions of the Wild Life School, or of the Iowa Ornithologists' Union can never forget his personality, and the personality which he put into the meetings. His spirit and enthusiasm were highly contagious, and we felt for him a genuine love and affection, as well as veneration for his years and experience.

The American School of Wild Life Protection will continue, and the Iowa Ornithologists' Union will meet again and again in its annual meeting, but in each there will be a change in the atmosphere; he who was before a vital, forceful presence, is now a most cherished memory and we shall speak his name with reverence.

Since news of his death came to me, I have thought often of the inspiration he has been whenever I met him or heard from him, and these lines from his "Ode to the Bobolink" I have repeated to myself again and again, and I am constrained to quote them here in closing:

"Pinklety-panklety-punkle-pinkle,"
So his broken revels sprinkle
O'er me till I catch the sweetness
Of the season's rich completeness,—
Till my soul escapes its keeper,
Leaves the earth, and soars to deeper
Vasts of light, by wing unaided,
Where bird and earth are hushed and faded,
And upon my inner vision
Breaks the glow of fields Elysian,
While from hosts of the Eternal
Comes the symphony supernal,
And those songs I lisped and stuttered
I hear again divinely uttered.

His life was one of a wide range of interest, and of varied experience. We bird students and bird lovers never came in contact with the man but we came away feeling that we had drunk at a spring of never-failing enthusiasm and inspiration. How we shall miss him, only those of us who knew him well can know. To me, his going is as if he had simply stepped over the brow of a hill, field glass in hand, bent on investigating some new tract of territory, his eye fired with eagerness, his jovial face lighted with a smile of anticipation.—CHAS. G. SPIKER.

MEMBERSHIP ROLL

MEMBERSHIP ROLL OF THE WILSON ORNITHOLOGICAL CLUB

Officers, 1927

President—Dr. Lynds Jones, 352 West College Street, Oberlin, Ohio.
Vice-President—Thos. H. Whitney, Atlantic, Iowa.
Secretary—Professor H. K. Gloyd, Kansas State College, Manhattan, Kansas.
Treasurer—Professor J. W. Stack, Michigan State College, East Lansing, Michigan.
Editor of the Wilson Bulletin—Professor T. C. Stephens, Morningside College, Sioux City, Iowa.
Councillors—A. F. Ganier, Nashville, Tennessee; P. B. Coffin, Chicago, Illinois; Dr. Alfred Lewy, Chicago, Illinois; Chreswell J. Hunt, Maywood, Illinois; Clarence Bretsch, Gary, Indiana.

Honorary Members

Ballard, Harlan Hoge	247 South, Pittsfield, Massachusetts
Nehrling, H.	Gotha, Florida
Ridgway, Robert	1030 South Morgan Street, Olney, Illinois
Widmann, Otto	5105 Enright Avenue, St. Louis, Missouri

Sustaining Members

Bacon, Brasher C.	Post Office. Madisonville, Kentucky
Bailey, Harold H.	206 Exchange Building, Miami, Florida
Baldwin, S. Prentiss	11025 East Boulevard, Cleveland, Ohio
Bales, Dr. Blenn R.	149 West Main Street, Circleville, Ohio
Barnes, R. M.	Lacon, Illinois
Bent, Arthur Cleveland	140 High Street, Taunton, Massachusetts
Bishop, Dr. Louis B.	450 Bradford Street, Pasadena, California
Blain, Dr. Alexander W.	2201 Jefferson Avenue, East, Detroit, Michigan
Blincoe, Benedict Joseph	Route 13, Dayton, Ohio
Boyce, James G.	422 West Ninth Street, Texarkana, Texas
Brandt, Herbert W.	14507 Shaker Boulevard, Cleveland, Ohio
Bruen, Frank	52 B Prospect Place, Bristol, Connecticut
Cannon, Gabriel	140 Otis Boulevard, Spartanbury, South Carolina
Chambers, W. Lee	Drawer 123, Eagle Rock, California
Christofferson, Dr. K.	303 Ashmun Street, Sault Ste. Marie, Michigan
Coffin, Lucy V. Baxter	Care Marie Baxter, 122 So. West 7th St. Richmond, Ind.
Coffin, Percival Brooks	5708 Kenwood Avenue, Chicago, Illinois
Conover, Henry Boardman	6 Scott Street, Chicago, Illinois
Crosby, Maunsell S.	Grasmere Farms, Rhinebeck, New York
Dickinson, Joseph Edward	704 Seventh Street, Rockford, Illinois
Earl, Thomas Mason	R. D. No. 2, Xenia, Ohio
Fordyce, George Lincoln	40 Lincoln Avenue, Youngstown, Ohio
Ganier, Albert Franklin	2507 Ashwood Avenue, Nashville, Tennessee
Goodrich, Mrs. Calvin	Care of Univ. Museum of Zoology, Ann Arbor, Michigan
Gray, D. R.	Rockdale, Tennessee
Haecker, H. H.	1010 Pine Street, Yankton, South Dakota
Hibbs, G. D.	Cox's Creek, Kentucky
Jones, Prof. Lynds	352 West College Street, Oberlin, Ohio
Kennard, Frederic Hedge	246 Dudley, Newton Centre, Massachusetts
Knickerbocker, C. K.	1214 McCormick Building, Chicago, Illinois
Longstreet, Rubert James	Daytona Beach, Florida
Lyon, William I.	124 Washington Street, Waukegan, Illinois
McCrea, W. S.	721 Rush Street, Chicago, Illinois
McIlhenny, Edw. Avery	Avery Island, Louisiana
Magee, Micheal J.	603 South Street, Sault Ste. Marie, Michigan
Mershon, Wm. Butts	Saginaw, Michigan
Metcalf, Prof. Zeno P.	State College, West Raleigh, North Carolina
Mills, Weir R.	Pierson, Iowa
Mitchell, Dr. Walton I.	Paonia, Colorado

Monk, Harry C.	Avoca Apartments, Nashville, Tennessee
Moog, Mrs. E.	711 Thirty-third Street, Sioux City, Iowa
Norris, Roy C.	R. R. B., Richmond, Indiana
Osgood, Dr. Wilfred Hudson	Field Museum of Natural History, Chicago, Illinois
Pearson, Dr. T. Gilbert	1974 Broadway, New York, New York
Perkins, Samuel E., III	701 Inland Bank Building, Indianapolis, Indiana
Phelps, Frank M.	338 East Bridge Street, Elyria, Ohio
Philipp, Philip Bernard	220 Broadway, New York, New York
Pickwell, Gayle B.	Department of Zoology, Northwestern Univ., Evanston, Ill.
Rich, Waldo L.	15 Rock Street, Saratoga Springs, New York
Richmond, Chas. Wallace	1929 Park Road, N. W., Washington, D. C.
Roberts, Dr. Thos. S.	Zool. Museum, Univ. of Minnesota, Minneapolis, Minn.
Rogers, Charles Henry	Nassau Inn, Princeton, New Jersey
Ryder, Mrs. Robert O.	1041 Franklin Avenue, Columbus, Ohio
Saunders, W. E.	352 Clarence Street, London, Ontario, Canada
Schaefer, Oscar Frederick	724 Woodbine Avenue, Rochester, New York
Shearer, Dr. Amon Robert	Mont Belvieu, Chambers County, Texas
Sherman, Miss Althea R.	National via McGregor, Iowa
Stephens, Prof. T. C.	Morningside College, Sioux City, Iowa
Stoddard, H. L.	Beachton, Grady County, Georgia
Strong, Prof. R. M.	5481 Blackstone Avenue, Chicago, Illinois
Stucker, Gus	415 West Columbia Street, Springfield, Ohio
Sutton, George Miksch	State Ornithologist, Harrisburg, Pennsylvania
Swenk, Prof. Myron H.	1410 North Thirty-seventh Street, Lincoln, Nebraska
Taylor, Mrs. H. J.	2813 Channing Way, Berkeley, California
Thayer, John Eliot	George Hill Road, Lancaster, Massachusetts
Uhrig, Mrs. A. B.	Oconomowoc, Wisconsin
Von Lengerke, Justus	257 Highland Avenue, Orange, New Jersey
Wallace, Chas. R.	69 Columbus Avenue, Delaware, Ohio
*Weeks, LeRoy Titus	Tabor College, Tabor, Iowa
Whitney, Thos. Hayes	Atlantic, Iowa
Willard, F. C.	Farmingdale, Long Island, New York
Wilson, Prof, Gordon	1434 Chestnut Street, Bowling Green, Kentucky
Wing, Leonard W.	R. F. D. 3, Jackson, Michigan
Young, John P.	1 Grave Place, Ithaca, New York

Active Members

Adams, Mrs. Amy M.	6136 Greenwood Avenue, Chicago, Illinois
Allen, Prof. Arthur A.	McGraw Hall, Cornell University, Ithaca, New York
Anderson, Edwin C.	R. R. 4, Dell Rapids, South Dakota
Armstrong, Edward Elton	2249 Calumet Avenue, Chicago, Illinois
Ayres, Douglas	111 Canah Street, Fort Plain, New York
Bailey, Mrs. Florence Merriam	1834 Kalorama Road, Washington, D. C.
Bailey, H. B.	Box 112, Newport News, Virginia
Bailey, Mrs. Mary L.	2109 Nebraska Street, Sioux City, Iowa
Baird, Robert L.	379 Oak Street, Oberlin, Ohio
Bartsch, Dr. Paul	U. S. National Museum, Washington, D. C.
Bellah, L. P.	Union Station, Nashville, Tennessee
Bennett, Walter W.	1629 West Palmer Avenue, Sioux City, Iowa
Bergtold, Dr. William H.	1159 Race, Denver Colorado
Bowdish, B. S.	Demarest, New Jersey
Brunn, Chas. A.	421 Commerce Building, Kansas City, Missouri
Bryens, Oscar McKinley	1312 Third Street, Three Rivers, Michigan
Burdick, Dr. George M.	Box 267, Milton, Wisconsin
Burgess, Mrs. E. A.	2826 Nebraska Street, Sioux City, Iowa
Burleigh, Prof. Thos. D.	Division of Forestry, Univ. of Georgia, Athens, Georgia
Burns, Frank L.	Berwyn, Pennsylvania
Burtch, Verdi	Branchport, New York
Butler, Dr. Amos W.	52 Downey Avenue, Indianapolis, Indiana

*Deceased.

Butler, Rev. L. Ermil	First M. E. Church, Oak Park, Illinois
Cahn, Dr. Alvin R.	606 East Stoughton Street, Champaign, Illinois
Camp, R. D.	Box 495, Brownsville, Texas
Carrol, J. J.	Box 356, Houston, Texas
Cavness, Sallie E.	600 North Main, Monticello, Arkansas
Chapman, Dr. Frank M.	Amer. Mus. Nat. Hist., 77th St. & C. P. W., New York
Clay, Miss Marcia B.	Bristolville, Ohio
Cobb, Rev. P. L.	1703 Primrose Avenue, Nashville, Tennessee
Cole, Prof. Leon J.	Agriculture-Chemistry Building, Madison, Wisconsin
Commons, Frank W.	608 Chamber of Commerce, Minneapolis, Minnesota
Cook, Grover	3900 Charlotte Avenue, Nashville, Tennessee
Cook, Mrs. Helen Newman	5901 Bellona Avenue, Govans, Baltimore, Md.
Cook, G. M.	27 Tod Lane, Youngstown, Ohio
Coryell, Sherman	1500 Hood Avenue,, Chicago, Illinois
Danforth, Stuart T.	College of Agriculture, Mayaguez, Porto Rico
Darling, A. B.	1614 Douglas Street, Sioux City, Iowa
Dean, Robert Henry	720 Quintard Avenue, Anniston, Alabama
Dean, Ruthven	1222 North State, Chicago, Illinois
Deane, Walter	29 Brewster Street, Cambridge, Massachusetts
DeLury, Ralph E.	Dominion Observatory, Ottawa, Canada
Dickey, Donald R.	514 Lester Avenue, Pasadena, California
Dingle, Edward von Seibold	Mount Pleasant, South Carolina
Donaghho, Walter	Box 532, Parkersburg, West Virginia
Doolittle, E. A.	Box 44, Painesille, Ohio
Dunkelberger, Harry W.	P. O. Box 6, Flourtown, Montgomery County, Pa.
Dunlap, M. Sigsbee	1451 Hampshire Street, Quincy, Illinois
Dwight, Dr. Jonathan	43 West 70th Street, New York, New York
Eddy, Samuel	Vivarium Bldg., Corner Wright and Healey, Champaign, Illinois
Ehinger, Dr. C. E.	730 Grand Avenue, Keokuk, Iowa
Eifrig, Prof. C. W. G.	504 Monroe Avenue, Oak Park, Illinois
Ekblaw, George E.	233 West Orleans, Paxton, Illinois
Ekblaw, W. Elmer	Box 431, North Crafton, Massachusetts
Ellis, Ralph, Jr.	Jericho, L. I., New York
Erichsen, W. J.	2311 Barnard Street, Savannah, Georgia
Fargo, W. G.	506 Union Street, Jackson, Michigan
Fields, E. A.	2111 Douglas Street, Sioux City, Iowa
Fifield, Lewis E.	14 Beekman Street, Plattsburg, New York
Figgins, J. D.	Colorado Museum Natural History, Denver, Colorado
Fleming, James Henry	267 Rusholme Road, Toronto, 4 Ontario, Canada
Floyd, Joseph L.	1009-11 Geo. D. Harter Bank Building, Canton, Ohio
Ford, Edward Russell	317 Washington Street, S. E., Grand Rapids, Michigan
Fuertes, Louis Agassiz	Cornell Heights, Ithaca, New York
Gabrielson, Ira N.	515 Post Office Building, Portland, Oregon
Gault, Benjamin T.	424 South Main Street, Glen Ellyn, Illinois
Gillespie, John A.	313 Sharp Avenue, Glenolden, Pennsylvania
Gilliam, R. A.	1123 Cedar Hill Avenue, Station A, Dallas, Texas
Gleason, Mrs. Louisa R.	700 Madison Avenue, S. E., Grand Rapids, Michigan
Gloyd, Prof. Howard K.	Dept. of Zoology, Kan. State Ag. Col., Manhattan, Kan.
Goddard, Henry N.	Western State Normal School, Kalamazoo, Michigan
Gowans, Ethel	308 South Lincoln Street, Kent, Ohio
Gregory, Stephen S., Jr.	345 Barry Avenue, Chicago, Illinois
Grinnell, Dr. Joseph	Mus. of Vert. Zool., Univ. of Calif., Berkeley, California
Griscom, Ludlow	American Museum of Natural History, New York, New York
Guest, Marjorie Lee	State Hospital, Box 476, Jamestown, North Dakota
Guthrie, Prof. Joseph E.	319 Lynn Avenue, Ames, Iowa
Guthrie, Mrs. Tracy W	Beaver Road, Edgeworth, Sewickley, Pennsylvania
Grover, H. Norris	2731 Hartzell Street, Evanston, Illinois
Handley, Chas. O.	308 North Broad Street, Thomasville, Georgia
Hankinson, Prof. T. L.	State Normal School, Ypsilanti, Michigan
Harris, Harry	5234 Hermosa Avenue, Eagle Rock, California
Hastings, Walter E.	South Lyon, Michigan
Haultain, Charles Frederick	Port Hope, Ontario, Canada

Hayward, W. J. 2919 Jackson Street, Sioux City, Iowa
Henderson, Archibald D. Belvedere, Alberta, Canada
Henderson, Hon. Junius 627 Pine Street, Boulder, Colorado
Henninger, Rev. W. F. Cachoeira, Rio Grande Do Sul, Brazil
Herdman, Carl D. 935 State Street, Bowling Green, Kentucky
Herrick, Prof. F. H. Western Reserve University, Cleveland, Ohio
Himmel, Walter J. Macalaster College, St. Paul, Minnesota
Hine, James S. Ohio State University, Columbus, Ohio
Hinshaw, Thomas D. 1908 Scottwood Avenue, Ann Arbor, Michigan
Hoffman, E. C. 740 West Superior Avenue, Cleveland, Ohio
Holt, Ernest Golsan Carnegie Museum, Pittsburgh, Pennsylvania
Honywill, Albert W., Jr. 2947 Collingwood Street, Detroit, Michigan
Hopkins, Addison W. 47 McGovern Avenue, Ashtabula, Ohio
Horsky, L. O. Mailing Division, P. O., Harney Station, Omaha, Nebraska
Howell, Arthur Holmes 2919 South Dakota Avenue, Washington, D. C.
Hunt, Chreswell John 810 South Eighteenth Avenue, Maywood, Illinois
Hunt, John Steger 605 East Fifth Street, Tuscumbia, Alabama
Huntington, H. G. Onawa, Iowa
Johns, Dr. E. W. College Hospital, Ames Iowa
Johnson, John C. 402 North Pine Street, Gunnison, Colorado
Jung, Clarence S. 5498 Cornell Avenue, Chicago, Illinois
Kahmann, Karl W. 2513-15 Lincoln Avenue, Chicago, Illinois
Kee, Hunter, No. 36 Ninth Avenue, Marlinton, West Virginia
Keyes, Prof. Charles R. Mount Vernon, Iowa
Kirn, Albert J. Box 157, Somerset, Texas
Kohler, Louis S. Rural Free Delivery No. 1, Clifton, New Jersey
Kretzman, Dr. Paul E. 801 DeMun Avenue, St. Louis, Missouri
Kuser, J. Dryden Barnardsville, New Jersey
Lambert, Earl Logan 237 North 1st Street, Carthage, Illinois
Lancaster, Esther A. Route 3, Hutchinson, Kansas
Lange, Richard C. 319 West Side Avenue, Webster Grove, Missouri
Larrabee, Prof. Austin P. Yankton College, Yankton, South Dakota
Law, J. Eugene 2370 Altadena Drive, Altadena, California
Lee, George Frederick, M. D., Ph. D. Florence South Carolina
Leffingwell, Dana J. Aurora-on-Dayuga, New York New York
Lewis, John B. P. O. Box 167, Lawrenceville, Virginia
Lewy, Dr Alfred 2051 East 72nd Place, Windsor Park Station, Chicago, Illinois
Lindsey, E. A. Tennessee-Hermitage National Bank, Nashville, Tennessee
Little, Luther 1403 Garfield Avenue, South Pasadena, California
Loring, J. Alden Owego, Tioga County, New York
Lowe, John W. Northern State Normal School, Marquette, Michigan
Lutz, Emelie 4844 Kenmore Avenue, Chicago, Illinois
Lyon, George R. 124 Washington Street, Waukegan, Illinois
Lyon, Mary C. 811 North Sheridan Road, Waukegan, Illinois
McAtee, W. L. Biological Survey, U. S. Dept. of Agri., Washington, D. C.
McConnell, Harry B. Cadiz, Ohio
McGregor, Richard C. Bureau of Science, Manila, Philippine Islands
McNeil, Dr. Charles A. 111 West 4th Street, Sedalia, Missouri
Madison, Allan A. Box 182, Flaxton, North Dakota
Magann, J. Wilbur 156 North Oak Park Avenue, Oak Park, Illinois
Main, John S. 610 State Street, Madison, Wisconsin
Mathews, Robert Stuart 49 West 52nd Street, New York, N. Y.
Mayfield, Prof. George R. Vanderbilt, University, Nashville, Tennessee
Mayfield, Mrs. George R. Vanderbilt University, Nashville, Tennessee
Metcalf, Dr. Franklin P. Fukien Christian University, Foochow, China
Middleton, Raymond J. Whitehall Road, Jeffersonville, Pennsylvania
Millard, Mrs. F. A. 1032 North 4th Street, Burlington, Iowa
Minich, Edward C. 1047 Fairview Avenue, Youngstown, Ohio
Mitchell, Catherine Adams 144 Fairbank Road, Riverside, Illinois
Moore, Arthur D. 712 Phoenix Street, South Haven, Michigan
Moore, Mrs. Nettie Purdy Rural Free Delivery, No. 1, Plymouth Michigan
More, R. I. Vernon, Texas

Morris, C. H.	McConnelsville, Ohio
Morse, Harry G.	Huron, Ohio
Morse, Margarette E.	Viroqua, Wisconsin
Moseley, Prof. Edwin L.	State Normal College, Bowling Green, Ohio
Mounts, Mrs. Beryl T.	Ballard Normal School, Macon, Georgia
Neff, Johnson A.	Marionville, Missouri
Nice, Mrs. Margaret M.	Norman, Oklahoma
Norris, Joseph P., Jr.	2122 Pine Street, Philadelphia, Pennsylvania
Northrup, Elizabeth A.	103 Willis Avenue, Youngstown, Ohio
Oberholser, Dr. Harry Church	2805 18th Street, Washington, D. C.
Ohern, D. W.	515 West 14th Street, Oklahoma City, Oklahoma
O'Neal, Mrs. Merit	2026 Eastern Parkway, Louisville, Kentucky
Ortega, James L.	Yountville, Napa County, California
Owen, Juliette M.	306 North Ninth Street, St. Joseph, Missouri
Palas, A. J.	663 Forty-ninth Street, Des Moines, Iowa
Palmer, Dr. T. S.	1939 Biltmore Street, N. W., Washington, D. C.
Pellew, Miss Marion	Box 455, Aiken, South Carolina
Pemberton, John R.	525 North Palm Drive, Beverly Hills, California
Pennington, Leigh H.	New York State College of Forestry, Syracuse, New York
Pennock, Charles J.	Kennett Square, Pennsylvania
Phillips, Dr. John H.	2117 Blair Boulevard, Nashville, Tennessee
Pindar, Dr. L. Otley	Versailles, Kentucky
Plath, Karl	2847 Giddings Street, Chicago, Illinois
Pough, Richard H.	4 Lenox Place, St. Louis, Missouri
Praeger, Prof. Wm. E.	Kalamazoo College, Kalamazoo, Michigan
Prill, Dr. Albert G.	Main Street, Scio, Oregon
Randall, Mrs. W. S.	Box 1011, Oklahoma City, Oklahoma
Reid, Mrs. Bruce	Care of Gulf Refinery, Port Arthur, Texas
Reid, Russell	911 Sixth Street, Bismark, North Dakota
Richardson, W. D.	4215 Prairie Avenue, Chicago, Illinois
Riley, Joseph H.	U. S. National Museum, Washington, D. C.
Roads, Katie M.	463 Vine Street, Hillsboro, Ohio
Robinson, J. M.	Alabama Polytechnic Institute, Auburn, Alabama
Rosen, Walter M.	Ogden, Iowa
Ross, Marjorie R.	Fairmount, West Virginia
Rust, Henry J.	Box 683, Coeur d'Alene, Idaho
Sanborn, C. C.	Box 55, Chicago, Illinois
Satterthwait, Mrs. Elizabeth A.	"Cloviris," 118 Waverly Pl., Webster Grove, Mo.
Saur, Belden	2157 Slane Avenue, Norwood, Ohio
Savage, Luke F.	1208 Jenny Lind Avenue, McKeesport, Pennsylvania
Schantz, O. M.	3219 Maple Avenue, Berwyn, Illinois
Schorger, A. W.	2021 Kendall Avenue, Madison, Wisconsin
Sheldon, Mrs. A. E.	1319 South Twenty-third Street, Lincoln, Nebraska
Silliman, Oscar P.	Alisal and Riker Streets, Salinas, California
Skinner, M. P.	44 Broadhead Avenue, Jamestown, New York
Smith, Prof. Frank	79 Fayette Street, Hillsdale, Michigan
Smith, Prof. Jesse L.	141 South Second Street, Highland Park, Illinois
Smith, Malcolm M.	309 Main Street, Negaunee, Michigan
Spiker, Chas. J.	Ashton, Iowa
Spingarn, Edward Davy Woodberry	Amenia, New York
Spofford, Walter R.	Highland Road, Berlin, Massachusetts
Stack, Prof. Joseph W.	Dept. of Zoology, Mich. State College, E. Lansing, Mich.
Stewart, Mrs. Clare T.	3475 Morrison Place, Cincinnati, Ohio
Stickney, Gardner P.	864 Summit Avenue, Milwaukee, Wisconsin
Stoner, Dr. Dayton	603 Summit Avenue, Iowa City, Iowa
Strong, Wm. A.	41 Grand Avenue, San Jose, California
Stuart, Anne	1905 D Street, Lincoln, Nebraska
Sudbrock, Mrs. Arthur F.	31 East Forty-fifth Street, Indianapolis, Indiana
Swales, Prof. Bradshaw H.	U. S. National Museum, Washington, D. C.
Swarth, Herry S.	2800 Price Street, Berkeley, California
Taylor, Warner	219 Clifford Court, Madison, Wisconsin
Thomas, Edward S.	116 Madison Avenue, Columbus, Ohio

Thomas, H. H.	1124 East Main Street, Pomeroy, Ohio
Tinker, Almerin David	519 Oswego Street, Ann Arbor, Michigan
Todd, W. E. Clyde	Carnegie Museum, Pittsburg, Pennsylvania
Travis, Florence G.	1458 Mars Avenue, Lakewood, Ohio
Tyler, Dr. Winsor M.	112 Pinckney Street, Boston, Massachusetts
Van Tyne, Josselyn	1942 Cambridge Road, Ann Arbor, Michigan
Warren, Edward R.	1511 Wood Avenue, Colorado Springs, Colorado
Wetmore, Dr. Alexander	U. S. National Museum, Washington, D. C.
Weyl, Edward Stern	6506 Lincoln Drive, Mt. Airy Philadelphia, Pennsylvania
Wheeler, Rev. H. E	Alabama Museum of Natural History, University, Alabama
White, Francis Beach	St. Paul's School, Concord, New Hampshire
Wilson, Burtis H.	5512 Indiana Avenue, Chicago, Illinois
Wilson, Frank Norman	804 Lawrence Street, Ann Arbor, Michigan
Winter, Nevin O.	The Belvedere, Toledo, Ohio
Wolcott, Prof. Robert H.	University of Nebraska, Lincoln, Nebraska
Worthington, William A.	Anville, Kentucky
Wright, Dr. Albert H.	113 East Upland Road, Ithaca, New York
Wright, Earl G.	3036 Twenty-second Street, Chicago, Illinois
Yoder, William H., Jr.	4510 North Carlisle Street Philadelphia, Pennslyvania

ASSOCIATE MEMBERS

Abbey, G. F.	Cottonwood, Minnesota
Adams, Benjamin	Wethersfield, Connecticut
Adams, Paul J.	505 Kenyon Avenue, Knoxville, Tennessee
Adkins, T R.	Box 911, Auburn, Alabama
Albertus, Mrs. Susan	Wilson Normal School, Washington, D. C.
Allen, A. F.	714 Thirty-fourth Street, Sioux City, Iowa
Allert, Oscar P.	R. R. 1, McGregor, Iowa
Allison, C. W.	Box 968, St. Louis, Missouri
Aspinwall, Mrs. Clarence	1839 Wyoming Avenue, Washington, D. C.
Bachrach, Mrs. Benjamin	1555 West Macon Street, Decatur, Illinois
Baerg, William J.	University of Arkansas, Fayetteville, Arkansas
Baldwin, Mrs. Harry L.	1006 East Marquette Road, Chicago, Illinois
Ball, William H.	1233 Irving Street, N. W., Washington, D. C.
Bangson, Prof. John S	Berea College, Berea, Kentucky
Barber, Bertram A.	350 West Street, Hillsdale, Michigan
Barnes, Charles S.	104 West Thirty-seventh Street, Bayonne, New Jersey
Barrody, Mrs. Nellie J.	3136 Maple Avenue, Berwyn, Illinois
Bates, Rev. John M.	Red Cloud, Nebraska
Baynard, Oscar E.	P. O. Box 104, Plant City, Florida
Beal, Clarence M.	184 Stowe Street, Jamestown, New York
Beebe, Ralph	2920 Hillger Avenue, Detroit, Michigan
Benedict, Prof. Harris M.	University of Cincinnati, Cincinnati, Ohio
Benedict, Mrs. Howard Smith	1283 West Lake Avenue, Lakewood, Ohio
Bennett, Rev. George	Iowa City, Iowa
Bergmann, Miss Amy F.	749 South Second Street, Louisville, Kentucky
Berryman, Benjamin F.	224 East Chicago Street, Elgin, Illinois
Bickel, Mrs. M. V.	817 North Jefferson Avenue, Mason City, Iowa
Birge, Miss Willie I.	College of Industrial Arts, Denton, Texas
Black, J. D.	Winslow, Arkansas
Bolt, Benjamin F.	1421 Prospect Avenue, Kansas City, Missouri
Bonesteel, V. C.	2215 Douglas Street, Sioux City, Iowa
Bordner, Mrs. Robert I.	Lamont, Iowa
Borror, Donald J.	149 West Park Street, Westerville, Ohio
Boulton, Wolfrid Rudyard, Jr.	Am. Mus. Nat. Hist., New York, New York
Bradt, Glenn W.	325 Linden Street, East Lansing, Michigan
Brady, Dr. John A.	St. Augustine College, Lakewood, Ohio
Brailliar, Floyd	Madison, Tennessee
Braly, John Claude	501 Burnside Street, Portland, Oregon
Brasher, Rex	Chickadee Valley, Kent, Connecticut
Bretsch, Clarence	690 Broadway, Gary, Indiana
Brodkorb, Pierce	910 Judson Avenue, Evanston Illinois

Brooks, Maurice	French Creek, West Virginia
Broomhall, W. H.	Stockport, Ohio
Brown, F. Martin	Comm. of the Palisades Interstate Park, Iona Island, N. Y.
Buchner, Mrs. E. M.	2453 North Central Park Avenue, Chicago, Illinois
Buck, Henry R.	60 Prospect Street, Hartford, Connecticut
Burket, Dr. Ivan R.	Ashland, Kansas
Burkhard, Fred	Accident, Maryland
Burnett, Prof. W. L.	State Agricultural College, Fort Collins, Colorado
Burton, Rev. Wm. W.	Alliance, Ohio
Campbell, Louis W.	304 Fearing Boulevard, Toledo, Ohio
Carlson, Carl O.	Department of Biology, Doane College, Crete, Nebraska
Carson, Mrs. Marie Philp	Waltonville, Illinois
Chamberlain, Chauncy W.	Hotel Hemenway, Boston, Massachusetts
Chase, John H.	69 Benita Avenue, Youngstown, Ohio
Chilcott, Mrs. E. F.	Woodward, Oklahoma
Christianson, Miss Anna	1812 Jackson Street, Sioux City, Iowa
Christy, Bayard H.	Box 950, Pittsburgh, Pennsylvania
Clark, Mrs. C. C.	922 North Third Street, Burlington, Iowa
Coad, Dwight	201½ South Main Street, Ottawa, Kansas
Cocke, Harriet T.	Box 144, Abingdon, Virginia
Cole, Arthur W.	735 North Main, West LaFayette, Indiana
Cole, John Lloyd	Fifth and Avenue K, Nevada, Iowa
Compton, Lawrence V.	409 West Webster Street, Pittsburg, Kansas
Cook, Fannye A.	Crystal Springs, Mississippi
Coulter, Stanley G.	Purdue University, LaFayette, Indiana
Craig, Glenn C.	570 Trade Street, Florence, Alabama
Cramer, Wm. G.	2501 Kemper Lane, Cincinnati, Ohio
Dales, Mrs. Marie	14 Twenty-fourth Street, Sioux City, Iowa
Danner, Mrs. Mary S.	1646 Cleveland Avenue, N. W., Canton, Ohio
Davis, Henry W.	Seaside Hotel, Atlantic City, New Jersey
Davis, Mrs. L. N.	520 East Lexington Avenue, Ashland, Kentucky
Davis, Russell S.	Clayton, Illinois
Dellinger, Samuel C.	339 Gregg Street, Fayetteville, Arkansas
De Mille, John B.	559 West 183rd Street, New York, New York
Dille, Fred M.	Niobrara Reserve, Valentine, Nebraska
Dodson, Joseph H.	Kankakee, Illinois
Doudna, Wilbur	Ottawa University, Ottawa, Kansas
Duncan, Mrs. Sanford	207 Union Street, Nashville, Tennessee
Dunlap, Mrs. Nellie	209 West Main Street, Waukesha, Wisconsin
Duston, Mrs. A. W.	1744 South Yorktown Street, Tulsa, Oklahoma
Eastman, Mrs. E. P.	719 Columbia Street, Burlington, Iowa
Eastman, Fred	2628 Dodge Street, Omaha, Nebraska
Edwards, Mrs. W. H.	Fairhope, Alabama
Eheim, J. M.	Hutchinson, Minnesota
Elrod, Mrs. Walter DeWitt	Box 103, Okmulgee, Oklahoma
Elwell, Mrs. Frank	14 Irvington Avenue, Dayton, Ohio
Emerson, William O.	Boulevard, "Palm Cottage," R 1, Hayward, California
Emlen, John T., Jr.	36 W. School Lane, Germantown, Philadelphia, Pennsylvania
Erwin, Mrs. Marjorie B.	Grand Junction, Iowa
Essig, Mrs. John	632 Webster Street, Webster City, Iowa
Evans, Virgil	Norwich, Ohio
Everett, E. A.	Waseca, Minnesota
Evins, Samuel H.	38 East Fourteenth Street, Atlanta, Georgia
Feser, Mrs. A. L.	840 West Sixty-sixth Street, Chicago, Illinois
Finfrock, C. M.	3186 Oak Road, Cleveland, Ohio
Fisher, Dr. G. Clyde	American Museum of Natural History, New York, N. Y.
Fitzpatrick, Fred L.	Coe College, Cedar Rapids, Iowa
Floyd, Charles B.	Auburndale, Massachusetts
Foft, Samuel F.	Lock Box 186, Waukee, Iowa
Forbush, Edw. H.	Room 136, State House, Boston, Massachusetts
Force, Edith R.	3021 East Eighth Street, Tulsa, Oklahoma
Ford, Louis P.	Barnwell Avenue, Aiken, South Carolina

Fortenbury, D. D.	Oakvale, Mississippi
Frankel, Mrs. Henry	301 Tonawanda Drive, Des Moines, Iowa
Friedrich, George W.	3029 Belmont Avenue, Chicago, Illinois
Fryklund, P. O.	Roseau, Roseau County, Minnesota
Fuchs, E. H.	Alma, Missouri
Funk, Mrs. Nettie S.	649 Harwood Drive, Des Moines, Iowa
Funkhouser, Prof. William D.	Dept. of Zoology, Univ. of Ky., Lexington, Ky.
Gano, Laura	Box 55, Thonotosassa, Florida
Gastrow, Albert J.	Lodi, Wisconsin
Geist, Robert M.	811 Euclaire Avenue, Columbus, Ohio
Getty, Mrs. B. M.	621 South Minnesota Avenue, Sioux Falls, South Dakota
Glover, Robt. B.	Milton College, Milton, Wisconsin
Good, Prof. Henry G.	Alabama Polytechnic Institute, Auburn, Alabama
Gorham, Dean B.	134 South Water Street, Decatur, Illinois
Grange, Wallace B.	Ladysmith, Wisconsin
Grant, Martin Lee	92 Morgan, Oberlin, Ohio
Grasett, Frank G.	536 Green Bay Road, Glencoe, Illinois
Green, Bess R.	Department of Zoology, Oregon Agric. College, Corvallis, Ore.
Green, Wyman R.	University of Chattanooga, Chattanooga, Tennessee
Gresham, C. L.	Lamasco, Kentucky
Grimes, S. A.	R. R. 6, Box 391, Jacksonville, Florida
Gromme, Owen J.	Milwaukee Public Museum, Milwaukee, Wisconsin
Gross, Prof. Alfred O.	Bowdoin College, Brunswick, Maine
Guernsey, Raymond G.	Trust Company Building, Poughkeepsie, New York
Hadeler, Edward W.	520 South State Street, Painesville, Ohio
Hadley, Miss Theodosia	Western State Normal, Kalamazoo, Michigan
Hall, Mrs. J. W.	R. R. 1, Mitchell, Nebraska
Hallinen, Joseph E.	R. R. 1, Cooperton, Oklahoma
Hamilton, Dr. B. A.	Lock Box 423, Highland Park, Illinois
Hanawalt, F. A.	65 West Broadway, Westerville, Ohio
Hardisty, Arthur H.	Silver Fox & Orchard Co., Shelburne, Vermont
Harkin, J. B.	Commissioner, Department of Interior, Ottawa, Canada
Harper, Arthur R.	Care of Ohio Life Insurance Co., Columbus, Ohio
Harrington, Edith M.	P. O. Box 308, Mason City, Iowa
Harris, William P., Jr.	15410 Windmill Point Drive, Grosse Pointe Parks, Mich.
Henning, Carl F.	Ledges State Park, Boone, Iowa
Herring, Burton R.	Woodchuck Lodge, Oak Spring Road, Libertyville, Illinois
Hicks, Lawrence E.	Fredericktown, Ohio
Hillmer, Davis B.	435 Canfield Avenue, West, Detroit, Michigan
Hilton, Dr. David C.	305 Richards Block, Lincoln, Nebraska
Hoag, Benjamin	Garfield, New York
Hoffman, Paul W.	1573 Twelfth Street, Milwaukee, Wisconsin
Holck, J. H.	Peterson, Iowa
Holland, Harold M.	Galesburg, Illinois
Hollinger, Alma	Ward-Belmont School, Nashville, Tennessee
Hood, Miss Adah M.	1002 Ninth Street, Sioux City, Iowa
Howard, Norman	1206 College Avenue, Ottawa, Kansas
Howe, Philip W.	Hampton, New Hampshire
Hunter, Grace E.	Woodward, Oklahoma
Hyde, A. Sidney	1008 South Lincoln Street, Urbana, Illinois
Hyer, Edward A.	Kent Scientific Muscum, Grand Rapids, Michigan
Ijams, H. P.	609 Empire Building, Knoxville, Tennessee
Ingersoll, Albert M.	908 F. Street, San Diego, California
Jackson, Robert L.	Box 104, Ohio, Illinois
Jay, William	1 North Westview Avenue, Mt. Airy, Philadelphia, Pennsylvania
Jensen, J. P.	Box 364, Dassel, Minnesota
Johnston, I. H.	Department of Agriculture, Charleston, West Virginia
Johnston, Laura Mildred	P. O. Box 32, Lexington, Oklahoma
Jones, Geo. T.	143 West College Street, Oberlin, Ohio
Jones, S. Paul	425 Maple Avenue, Waukesha, Wisconsin
Kalmbach, E. R.	Biological Survey, U. S. Dept. of Agric., Washington, D. C.
Keck, Prof. Warren N.	Milton College, Milton, Wisconsin

Keim, Thomas D.	Glendale, Maryland
Kendeigh, S. Charles	136 Woodland Avenue, Oberlin, Ohio
Kennedy, H. N.	6541 Grand River Avenue, Detroit, Michigan
Knappen, Phoebe	214 Stewart Avenue, Ithaca, New York
Knight, Harry H.	Dept. Zool. and Ent., Iowa State College, Ames, Iowa
Koerner, Mrs. Theo.	815 Twenty-seventh Street, Milwaukee, Wisconsin
Komarek, Edwin V.	835 North Oak Park Avenue, Oak Park, Illinois
Kubichek, W. F.	Coe College, Cedar Rapids, Iowa
Kutchin, Dr. Victor	Green Lake, Wisconsin
Lancaster, L. Y.	1111 Broadway, Bowling Green, Kentucky
Lapsley, Mrs. R. M.	307 Franklin Street, Keokuk, Iowa
Larson, Adrian	
Laughlin, J. A.	318 East Fordon Street, Marshall, Missouri
Lee, Mrs. Arthur J.	Fourteenth and Locust Streets, Atlantic, Iowa
Lehman, Mrs. John R.	163 Garst Street, Dayton, Ohio
Letl, Frank H.	Sublette, Illinois
Lewis, M. G.	County Agent, Lexington, Virginia
Lincoln, Frederick C.	Bureau Biological Survey, Washington, D. C.
Lively, E. L.	Hillcrest, Fairmont, West Virginia
Livingston, Philip Atlee	P. O. Box 62, Wayne, Pennsylvania
Lloyd, C. K.	12 North Elm Street, Oxford, Ohio
Lloyd, Hoyes	406 Queen Street, Ottawa, Ontario, Canada
Lobdell, Richard N.	Department of Zoology, A. & M. College, Mississippi
Lomax, Dr. Claude	1024 Maryland Street, Evansville, Indiana
Long, Dr. J. Harding	568 Johnson Street, Gary, Indiana
Luce, Geo. W.	Hayward, California
Ludcke, George O.	5220 Beard Avenue, South, Minneapolis, Minnesota
Luther, Geo. W.	DeTour, Michigan
McCabe, Olivia	3516 Fifth Street, Des Moines, Iowa
McCorkle, Eloise	Peabody College, Nashville, Tennessee
McKee, Madge	Goodland, Indiana
McKeough, George T.	"Erie Manor," R. 1, Blenheim, Ontario, Canada
McNish, E. M.	Madison, Tennessee
Malcomson, Richard O.	1631 West Fifth Street, Sioux City, Iowa
Marburger, Clifford	Denver, Pennsylvania
Mason, Robert F., Jr.	Care of Mrs. E. M. Page, Univ. of Va., Charlottesville, Va.
Michener, Harold	418 Elm Avenue, Pasadena, California
Miller, Mrs. H. C.	1110 Main Street, Racine, Wisconsin
Moffat, E. E.	146 Oak Street, Winsted, Connecticut
Moon, M'Della	Lincoln Hall, Bluffton, Ohio
Moore, Miss Eugenia	440 Sheridan Road, Glencoe, Illinois
Morrill, Albro D.	Hamilton College, Clinton, New York
Morse, Etta M.	Woonsocket, South Dakota
Morse, Frank E.	Boston Bird Book Co., 162 Boylston Street, Boston ,Mass.
Morse, Geo. W.	318 East Ninth Street, Tulsa, Oklahoma
Mount, Mrs. Helen F.	1448 South Carson Street, Tulsa, Oklahoma
Mousley, Wm. H.	469 Harvard Avenue, Notre Dame de Grace, Montreal, Canada
Mueller, Mrs. Hans	Willow Terrace, Apartment 81, Louisville, Kentucky
Munger, Mrs. Edith	Hart, Michigan
Murdoch, Thomas M.	2001 Douglas Street, Sioux City, Iowa
Murray, Ethel R.	3911 Fourth Avenue, Sioux City, Iowa
Musselman, T. E.	124 South Twenty-fourth Street, Quincy, Illinois
Nauman, E. D.	420 South Shuffleton Street, Sigourney, Iowa
Nelson, F. W.	Sheldon, Iowa
Nelson, W. C.	4024 Grand Avenue, Des Moines, Iowa
Newcomb, C. A., Jr.	Bloomfield Hills, R. F. D., Pontiac, Michigan
Newton, Thomas D.	6826 Clyde Avenue, Chicago, Illinois
Nicholson, Nevin G.	235 Nugent Avenue, Ft. Lauderdale, Florida
Northup, Miss Ruby M.	Washington, Kansas
Norton, Arthur Herbert	22 Elm Avenue, Portland, Maine
Palmer, Mary C.	760 Midlothian Boulevard, R. D. 2, Youngstown, Ohio
Palmer, R. H.	Palo Alto, California

Pellett, Frank C.	Hamilton, Illinois
Pember, Karl A.	Woodstock, Vermont
Peters, Harold S.	Box 206, Onley, Virginia
Pierce, Chas. W.	Boynton, Florida
Pierce, Fred J.	Winthrop, Iowa
Pierce, Wright M.	Box 343, Claremont, California
Pike, Herbert	Whiting, Iowa
Potter, Julian K.	437 Park Avenue, Collingswood, New Jersey
Potts, Mrs. F. A.	140 Crest Road, South, Chattanooga, Tennessee
Radley, Miss Malrose	Kelvin, North Dakota
Rainey, Prof. Frank L.	Centre College, Danville, Kentucky
Ramsden, Charles T.	P. O. Box 146, Guantanamo, Cuba
Rapp, F. W.	Vicksburg, Michigan
Reed, Mrs. C. I.	2635 Reagan Street, Dallas, Texas
Reed, E. E.	Monticello, Iowa
Reeder, J. T.	318 College Avenue, Houghton, Michigan
Rich, Dr. Guy C.	1820 El Cerrito Place, Hollywood, California
Richardson, Carl	Trail, Oregon
Rishel, John B.	3600 Clay Street, Denver, Colorado
Roark, Mrs. Louis	926 North Collins, Okmulgee, Oklahoma
Robertson, John McB	Buena Park, California
Robl, Frank W.	Ellinwood, Kansas
Robson, Ernest R.	Toulon, Illinois
Rodger, Walter	Route 1, Charlevoix, Michigan
Rose, Frank H.	Biological Survey, Moiese, Montana
Ross, Miss Julia E.	910 Thirteenth Street, Sioux City, Iowa
Rowan, Prof. William	Alberta University, Edmonton, Alberta, Canada
Ruffin, Winford A.	Box 247, Auburn, Alabama
Ruhl, Harry D.	318½ Albert Avenue, East Lansing, Michigan
Sampson, W. B.	1005 North San Joaquin Street, Stockton, California
Saunders, George B.	305 East Tenth Street, Oklahoma City, Oklahoma
Sawyer, Edmund J.	Yellowstone Park, Wyoming
Schafer, John J.	R. 2, Port Byron, Illinois
Schmidt, Mrs. G. G.	Elkader, Iowa
Scott, J. S.	Dyersburg, Tennessee
Scott, Mrs. R. T.	602 North Seventh Street, Cambridge, Ohio
Scudder, Dr. Walter P.	Litchfield, Ohio
Shaffer, Mrs. Alicia B.	2260 Park Avenue, Walnut Hills, Cincinnati, Ohio
Shankland, F. N.	Box 522, Willoughby, Ohio
Sharp, Vernon	1908 Acklen Avenue, Nashville, Tennessee
Shaver, Jesse M.	Peabody Teacher's College, Nashville, Tennessee
Shirling, A. E.	3849 East Sixty-second Street, Kansas City, Missouri
Simonds, Mrs. Ida K.	Onawa, Iowa
Sloanaker, J. L.	907 Mansfield Avenue, Spokane, Washington
Smith, Miss Grace	1310 South Cornelia Street, Sioux City, Iowa
Smith, O. Warren	112 West Church, Evansville, Wisconsin
Smith, Roy H.	183 North Prospect Street, Kent, Ohio
Smith, Wendell P.	Wells River, Vermont
Smyth, Dr. L. C. R.	235 Acton Road, Columbus, Ohio
Sparks, Marion E.	1207 West Oregon, Urbana, Illinois
Speed, Mrs. James B.	505 West Ormsby Avenue, Louisville, Kentucky
Stansbury, Mrs. V. E.	403 Third Avenue, North, Mount Vernon, Iowa
Sterry, Elizabeth	2605 Belmont Boulevard, Nashville, Tennessee
Stevens, Prof. O. A.	State College Station F, Fargo, North Dakota
Stevens, Mrs. P. H.	4370 Adams Street, Gary, Indiana
Stevenson, George Ernest	Smithtown Branch, New York
Stevenson, James O.	207 Pine Street, Wooster, Ohio
Stewart, Paul A.	Leetonia, Ohio
Stillman, L. P.	Dolliver, Iowa
Stockbridge, Charles A.	2323 Webster, Fort Wayne, Indiana
Stoltz, Edith B.	R. R. 13, Dayton, Ohio
Stoner, Emerson A.	Box 444, Benicia, California

Straw, O. J. 1519 Spring Avenue, Sioux Falls, South Dakota
Sundquist, Leona State Normal, Bellingham, Washington
Sullivan, Walter F. Pennsylvania State Forest School, Mont Alto, Pennslyvania
Swanebeck, Harvey R. No. 1, Fenton, Michigan
Swenk, Mrs. Myron H. 1410 North Thirty-seventh Street, Lincoln, Nebraska
Taber, William B., Jr. Greenwood Farm, Kansas, Illinois
Tatum, Mary 207 South Wood Street, Hominy, Oklahoma
Taverner, P. A. Victoria Memorial Museum, Ottawa, Ontario, Canada
Taylor, L. McDermott, Ohio
Teachenor, Dix 437 West Sixtieth Terrace, Kansas City, Missouri
Tilley, James M. Worthington, Indiana
Townsend, Charles W. Ipswich, Massachusetts
Trescot, Edward B. R. 4, Box 221, Petaluma, California
Turrell, Loring Smithtown Branch, Long Island, New York
Van Arsdale, Susan R. 632 Sheridan Square, Evanston, Illinois
Van Cleve, M. R. 3115 Hopewell Place, Toledo, Ohio
Van Vechten, Mrs. C. D. 845 Second Avenue, Cedar Rapids, Iowa
Visscher, Prof. Paul Western Reserve University, Cleveland, Ohio
Walker, Mrs. Bell Murray State Normal and Teachers College, Murray, Ky.
Walker, W. M., Jr. 109 A Twenty-third Avenue, North, Nashville, Tennessee
Walp, Russell Lee Beards Lane, R. F. D. No. 3, Youngstown, Ohio
Warner, Willis H. R. No. 2, Canfield, Ohio
Warthin, Aldred S., Jr. 1020 Ferdon Road, Ann Arbor, Michigan
Watson, Lucius H. 4123 Sheridan Boulevard, Lincoln, Nebraska
Weatherill, Charlotte 2428 Arlington Avenue, Birmingham, Alabama
Weigle, Mrs. Charles F. 1021 North 21st Street, Birds' Acre, LaFayette, Ind.
Wendelburg, Mrs. Toni R. 833 Twenty-eighth Street, Des Moines, Iowa
Wildman, Alexander James, Jr. 238 North C Street, Hamilton, Ohio
Williams, H. V. State Game Farm, Grafton, North Dakota
Williams, Noel J. Arnolds Park, Iowa
Williams, Owen L. 1228 Garfield Street, Lincoln, Nebraska
Williams, Robert W. 423 West Arch Street, Madisonville, Kentucky
Wilson, Harold C. Ephraim, Wisconsin
Wood, Norman A. Museum of Zoology, Univ. of Mich., Ann Arbor, Michigan
Wright, Carl F. 14 Cayuga Street, Auburn, New York
Young, Wallace P. 203 Fern Avenue, Toronto, Ontario, Canada
Yunker, Emelie 1140 Everett Street, Louisville, Kentucky

SUBSCRIBERS

Batchelder, C. F. Peterborough, New Hampshire
Ester, Sidney R. 403½ Third Street, Bloomington, Indiana
Thomas, Howard, Jr. Terrace Park, Ohio (Pomery, Ohio?)
Carnegie Free Library 5th & Main Sts., Ottawa, Kans. (Grace R. Meeker, Lib.)
Colorado Museum Natural History City Park, Denver, Colorado
Culver Stockton College Library Canton, Missouri
Eau Claire Public Library Cor. S. Farwell & Grand Ave. E., Eau Claire, Wisc.
Indianapolis Public Library Indianapolis, Indiana
Iowa State College Library Ames, Iowa
Iowa State Teachers College Cedar Falls, Iowa
John Crerar Library 86 East Randolph Street, Chicago, Illinois
Kent State Teachers College Library Kent, Ohio
Logansport Public Library Logansport, Indiana
Louisiana State Museum Jackson Sq., New Orleans, La. (Robert Glenk, Lib.)
Lydia Brunn Woods Library Falls City Nebraska
Museum of History, Science and Art Exposition Park, Los Angeles, California
New York State Library Albany, New York
Ontario Agricultural College, Library Department Guelph, Canada
Oregon Agricultural College Library Corvallis, Oregon
Ottumwa Public Library Ottumwa, Iowa
Public Library of Ft. Wayne & Allen Co., Ft. Wayne, Ind. (L. M. Colerick, Lib.)
Public Library, Order Department 325 Superior Avenue, N. E., Cleveland, Ohio
Puget Sound Biological Station, University of Washington Seattle, Washington

R. Sayre & Co.	5116 Indiana Avenue, Chicago, Illinois
St. Louis Public Library, Order Dept.	Fourteenth and Olive Sts., St. Louis, Mo.
Slocum Library, Ohio Wesleyan University	Delaware, Ohio
Spencer Public Library	Spencer, Iowa
State College Library	Brookings, South Dakota
State Teachers College Library	Kearney, Nebraska
Texas University Library	Austin, Texas
University Library	Leipsig, Germany
University of California Library	Berkeley, California
University of Illinois Library	Urbana, Illinois
University of Washington Library	Seattle, Washington
University of Wisconsin Library	Madison, Wisconsin
Upper Iowa University Library	Fayette, Iowa

EXCHANGES

Academy Arts and Sciences, Staten Island, New York
American Museum of Natural History Library, New York, New York
Aquila, Royal Hungarian Inst., Budapest, Hungary
Bird-Lore, American Museum Natural History, New York, New York
Condor, Care of W. Lee Chambers, Eagle Rock, Los Angeles, California
Field Museum of Natural History, Chicago, Illinois
Friteche, Paul, Naturwissenschafliche Institut, Bremerhavin, Germany
Instituto Geologico, Mexico, D. F.
Le Gerfaut, Square Prince Charles 21, Brussels, Lucken, Belgium
Livingston, Dr. Burton E., Sec. A. A. A. S., Johns Hopkins Univ., Baltimore, Md.
Marine Biological Association, Librarian, La Jolla, California
Norsk Ornithologisk Tidsskrift, Stavanger Museum, Stavanger, Norway
Ohio Naturalist, Ohio State University, Columbus, Ohio
Oologist Record, 45 St. Martins Lane, London, W. C. 2, England
Ornithologische Gesellschaft, Dr. E. Stresemann, Invalidste 43, Zoological Museum, Berlin, Germany
Ottawa Field Nature Club, Carnegie Library, Ottawa, Canada.
Public Museum, Milwaukee, Wisconsin
Smithsonian Institution, Librarian, Washington, D. C.
Societe Ornithologique de France, 11 Rue du Montparnasse, Paris, France
Societe zoologique de Geneve, Ecole Superieure, Rue Voltaire, Geneve, Switzerland
State University Library, Iowa City, Iowa
The Auk, Dr. Witmar Stone, Acad. of Nat. Sciences, Logan Square, Phila., Pa.
U. S. Biological Survey, E. W. Nelson, Washington, D. C.
U. S. Department of Agriculture, Washington, D. C.
U. S. National Museum, Library, Washington, D. C.
Victorian Naturalist, F. G. A. Barnard, Victoria St., Melbourne, Victoria, Australia
Zoological Society of London, Regents Park, London, W. W. 8, England

TO OUR CONTRIBUTORS

Our members are urged to submit articles for publication in the BULLETIN Short items are desired for the department of General Notes, as well as longer contributions, especially pertaining to life-history, migration, ecology, behavior, song, economic ornithology, field equipment and methods, etc. Local faunal lists are also desired, but they should be annotated, at least briefly, and should be based upon sufficient study to be reasonably complete. Authors are asked to include the common name, the scientific name (from the A. O. U. check-list), and annotations, and they should be arranged in this order. The annotations should include explicit data concerning unusual species. Omit serial numbering.

THE MANUSCRIPT. The manuscript, or copy, should be prepared with due regard for literary style, correct spelling and punctuation. Use sheets of paper of good quality and of letter size (8½x11 inches); write on one side only, and leave wide margins; if at all possible manuscript should be prepared with a typewriter, using double spacing and a reasonably fresh, black ribbon.

The title should be carefully constructed so as to indicate most clearly the nature of the subject matter of the contribution. Where the paper deals with a single species it is desirable to include in the title both the common and the scientific names, or, to include the scientific name in the introductory paragraph. Contributors are requested to mark at the top of the first page of the manuscript the number of words contained. This will save the editor's time and will be appreciated.

Manuscripts intended for publication in any particular issue should be in the hands of the editor thirty days prior to the date of publication.

ILLUSTRATIONS. To reproduce well prints should have good contrast with detail. In sending prints the author should attach to each one an adequate description or legend.

BIBLIOGRAPHY. The scientific value of some contributions is enhanced by an accompanying list of works cited. Such citations should be complete, giving author's name, full title of the paper, both the year and volume of the periodical, and pages, first and last.

PROOF. Galley proof will be regularly submitted to authors. Page proofs will be submitted only on request. Proof of notes and short articles will not be submitted unless requested. All proofs must be returned within four days. Expensive changes in copy after the type has been set must be charged to the author.

SEPARATES. The Club is unable, under present financial conditions, to furnish reprints to authors gratis. Arrangements will be made, however, for such reprints to be obtained at practically cost. The cost will vary somewhat with the nature of the composition, but will depend mainly upon the number of pages. A scale of rates is appended which will serve as a guide to the approximate printer's costs.

If a blank page is left in the folding this may be used for a title page, which will be set and printed at the rate indicated. If a complete cover with printed title page is desired it may be obtained at the rate shown in the last column. All orders for separates must accompany the returned galley proof upon blanks provided. Orders cannot be taken after the forms have been taken down.

Copies	2	4	6	8	12	16	20	24	28	32	36	40	Cover
50	$1.25	$2.00	$2.75	$3.50	$4.75	$6.00	$7.75	$8.50	$9.75	$11.00	$12.25	$13.50	$2.75
100	1.50	2.25	3.00	3.75	5.00	6.25	7.50	8.75	10.00	11.25	12.50	13.75	2.50
200	2.00	2.75	3.50	4.25	5.50	6.75	8.00	9.25	10.50	11.75	13.00	14.25	3.00
300	2.75	3.50	4.25	5.00	6.25	7.50	8.75	10.00	11.25	12.50	13.75	15.00	4.00
400	3.25	4.00	4.75	5.50	6.75	8.00	9.25	10.50	11.75	13.00	14.25	15.50	5.00
500	3.75	4.50	5.25	6.00	7.25	8.50	9.75	11.00	12.25	13.50	14.75	16.00	6.00

Repaging—25c per page extra. Title Page—1.25.

SALE OF BACK NUMBERS

The entire stock of back numbers of the WILSON BULLETIN up to 1925, must be moved from their present storage quarters before summer. In order to reduce as much as possible the bulk for re-storage the following offer is made, to terminate on June 15, 1927.

Numbers 15, 22, 46, 65, and 94 are out of print and cannot be supplied. Of No. 29 four copies remain; of No. 30 eight copies; of No. 34 and 35 six copies each; of No. 36 eight copies; and of No. 37 five copies.

The total available file up to 1924 inclusive, exclusive of these six scarce numbers above listed, will be sold for $15.00 per set. These six scarce numbers will be sold for $1.00 each per copy.

The offer here made includes only the WILSON BULLETIN, not its predecessors (see back cover page of recent numbers of the WILSON BULLETIN. The first 27 volumes (new series) have been regularly listed at $1.00 each; the 4 volumes from 1921 to 1924 inclusive, are listed at $1.50 each.

The proceeds from these sales will be used to reprint numbers that are now out of print.

The offer does not hold good after the removal of the stock, which will be about June 15, 1927.

Address all orders to

LYNDS JONES,
352 West College Street,
OBERLIN, OHIO.